Código da avaliadora generalizada de incertezas:

Autores:

Ricardo de Araújo Kalid

Gesner Andrade Nery Júnior

Guilherme Augusto de Almeida Gonçalves

Lucas Aguiar Teixeira

Data: 17/01/2010

Tela 01

```
function varargout = tela_01_inicial(varargin)
% TELA_01_INICIAL M-file for tela_01_inicial.fig
%      TELA_01_INICIAL, by itself, creates a new TELA_01_INICIAL or
raises the existing
%      singleton*.
%
%      H = TELA_01_INICIAL returns the handle to a new TELA_01_INICIAL
or the handle to
%      the existing singleton*.
%
%      TELA_01_INICIAL('CALLBACK',hObject,eventData,handles,...) calls
the local
%      function named CALLBACK in TELA_01_INICIAL.M with the given
input arguments.
%
%      TELA_01_INICIAL('Property','Value',...) creates a new
TELA_01_INICIAL or raises the
%      existing singleton*.  Starting from the left, property value
pairs are
%      applied to the GUI before tela_01_inicial_OpeningFunction gets
called.  An
%      unrecognized property name or invalid value makes property
application
%      stop.  All inputs are passed to tela_01_inicial_OpeningFcn via
varargin.
%
%      *See GUI Options on GUIDE's Tools menu.  Choose "GUI allows
only one
%      instance to run (singleton)".
%
% See also: GUIDE, GUIDATA, GUIHANDLES

% Edit the above text to modify the response to help tela_01_inicial

% Last Modified by GUIDE v2.5 07-Apr-2009 17:13:04


% Begin initialization code - DO NOT EDIT
gui_Singleton = 1;
gui_State = struct('gui_Name',       mfilename, ...
                   'gui_Singleton',  gui_Singleton, ...
                   'gui_OpeningFcn', @tela_01_inicial_OpeningFcn, ...
```

```matlab
                    'gui_OutputFcn',  @tela_01_inicial_OutputFcn, ...
                    'gui_LayoutFcn',  [] , ...
                    'gui_Callback',   []);
if nargin && ischar(varargin{1})
    gui_State.gui_Callback = str2func(varargin{1});
end

if nargout
    [varargout{1:nargout}] = gui_mainfcn(gui_State, varargin{:});
else
    gui_mainfcn(gui_State, varargin{:});
end
% End initialization code - DO NOT EDIT


% --- Executes just before tela_01_inicial is made visible.
function tela_01_inicial_OpeningFcn(hObject, eventdata, handles,
varargin)


% This function has no output args, see OutputFcn.
% hObject    handle to figure
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
% varargin   command line arguments to tela_01_inicial (see VARARGIN)

% Choose default command line output for tela_01_inicial
handles.output = hObject;

% Update handles structure
guidata(hObject, handles);

% UIWAIT makes tela_01_inicial wait for user response (see UIRESUME)
% uiwait(handles.figure1);


% --- Outputs from this function are returned to the command line.
function varargout = tela_01_inicial_OutputFcn(hObject, eventdata,
handles)
a=imread('nano.jpg','jpeg');
IconData=a;
%questIconMap(256,:) = get(handles.figure1, 'Color');
% IconCMap=a;

Img=image(IconData, 'Parent', handles.axes1);
%set(handles.figure1, 'Colormap', IconCMap);

set(handles.axes1, ...
    'Visible', 'off', ...
    'YDir'   , 'reverse'        , ...
    'XLim'   , get(Img,'XData'), ...
    'YLim'   , get(Img,'YData')  ...
    );

% Make the GUI modal
set(handles.figure1,'WindowStyle','modal')

% UIWAIT makes untitled2 wait for user response (see UIRESUME)
uiwait(handles.figure1);
```

```
% varargout  cell array for returning output args (see VARARGOUT);
% hObject    handle to figure
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Get default command line output from handles structure
varargout{1} = handles.output;


% --- Executes on button press in pushbutton1.
function pushbutton1_Callback(hObject, eventdata, handles)
close
clear all
run('tela_02_medicao')
% hObject    handle to pushbutton1 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
```

Tela 02

```
function varargout = tela_02_medicao(varargin)

% TELA_02_MEDICAO M-file for tela_02_medicao.fig
%      TELA_02_MEDICAO, by itself, creates a new TELA_02_MEDICAO or
raises the existing
%      singleton*.
%
%      H = TELA_02_MEDICAO returns the handle to a new TELA_02_MEDICAO
or the handle to
%      the existing singleton*.
%
%      TELA_02_MEDICAO('CALLBACK',hObject,eventData,handles,...) calls
the local
%      function named CALLBACK in TELA_02_MEDICAO.M with the given
input arguments.
%
%      TELA_02_MEDICAO('Property','Value',...) creates a new
TELA_02_MEDICAO or raises the
%      existing singleton*.  Starting from the left, property value
pairs are
%      applied to the GUI before tela_02_medicao_OpeningFunction gets
called.  An
%      unrecognized property name or invalid value makes property
application
%      stop.  All inputs are passed to tela_02_medicao_OpeningFcn via
varargin.
%
%      *See GUI Options on GUIDE's Tools menu.  Choose "GUI allows
only one
%      instance to run (singleton)".
%
% See also: GUIDE, GUIDATA, GUIHANDLES


% Edit the above text to modify the response to help tela_02_medicao

% Last Modified by GUIDE v2.5 11-Apr-2008 15:10:50
```

```matlab
% Begin initialization code - DO NOT EDIT
gui_Singleton = 1;
gui_State = struct('gui_Name',       mfilename, ...
                   'gui_Singleton',  gui_Singleton, ...
                   'gui_OpeningFcn', @tela_02_medicao_OpeningFcn, ...
                   'gui_OutputFcn',  @tela_02_medicao_OutputFcn, ...
                   'gui_LayoutFcn',  [] , ...
                   'gui_Callback',   []);
if nargin && ischar(varargin{1})
    gui_State.gui_Callback = str2func(varargin{1});
end

if nargout
    [varargout{1:nargout}] = gui_mainfcn(gui_State, varargin{:});
else
    gui_mainfcn(gui_State, varargin{:});
end
% End initialization code - DO NOT EDIT


% --- Executes just before tela_02_medicao is made visible.
function tela_02_medicao_OpeningFcn(hObject, eventdata, handles, varargin)
global medicao nc metodo significativo
% This function has no output args, see OutputFcn.
% hObject    handle to figure
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
% varargin   command line arguments to tela_02_medicao (see VARARGIN)

% Choose default command line output for tela_02_medicao
handles.output = hObject;

% Update handles structure
guidata(hObject, handles);
if isempty(medicao)~=1
    if medicao==1
    set(handles.radiobutton1,'Value',1)
    elseif medicao==0
    set(handles.radiobutton2,'Value',1)
    end
end
if isempty(significativo)~=1
    if significativo==1
    set(handles.radiobutton5,'Value',1)
    elseif significativo==0
    set(handles.radiobutton6,'Value',1)
    end
end
if isempty(nc)~=1
    set(handles.edit1,'String',nc);
end
if isempty(metodo)~=1
    set(handles.checkbox1,'Value',metodo(1));
    set(handles.checkbox2,'Value',metodo(2));
end
% UIWAIT makes tela_02_medicao wait for user response (see UIRESUME)
% uiwait(handles.figure1);
```

```matlab
% --- Outputs from this function are returned to the command line.
function varargout = tela_02_medicao_OutputFcn(hObject, eventdata, handles)
% varargout  cell array for returning output args (see VARARGOUT);
% hObject    handle to figure
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Get default command line output from handles structure
varargout{1} = handles.output;




function edit1_Callback(hObject, eventdata, handles)
% hObject    handle to edit1 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of edit1 as text
%        str2double(get(hObject,'String')) returns contents of edit1
as a double


% --- Executes during object creation, after setting all properties.
function edit1_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit1 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end


% --- Executes on button press in pushbutton1.
function pushbutton1_Callback(hObject, eventdata, handles)
run('help_02_nivelconfianca')
 % hObject    handle to pushbutton1 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)



% --- Executes on button press in radiobutton1.
function radiobutton1_Callback(hObject, eventdata, handles)
set(handles.radiobutton2, 'Value', 0)
set(handles.radiobutton1, 'Value', 1)
% hObject    handle to radiobutton1 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hint: get(hObject,'Value') returns toggle state of radiobutton1


% --- Executes on button press in radiobutton2.
```

```matlab
function radiobutton2_Callback(hObject, eventdata, handles)
set(handles.radiobutton1, 'Value', 0)
set(handles.radiobutton2, 'Value', 1)
% hObject    handle to radiobutton2 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hint: get(hObject,'Value') returns toggle state of radiobutton2


% --- Executes on button press in pushbutton2.
function pushbutton2_Callback(hObject, eventdata, handles)
global medicao nc metodo significativo pular_tela
%guilherme 30/06/10

pular_tela = get(handles.checkbox4,'Value');

% GIGA 02/09%%%%
if
(get(handles.radiobutton1,'Value')==0)&&(get(handles.radiobutton2,'Val
ue')==0)
    errordlg('Você deve escolher uma opção de ''tipo de medição!''')
    return
elseif
(get(handles.radiobutton5,'Value')==0)&&(get(handles.radiobutton6,'Val
ue')==0)
    errordlg('Você deve escolher uma opção de ''número de algarismos
significativos da incerteza''!')
    return
elseif
(get(handles.checkbox1,'Value')==0&&get(handles.checkbox2,'Value')==0)
    errordlg('Você deve escolher uma opção de ''método de avaliação da
incerteza''!')
    return
end

if isempty(get(handles.edit1,'String'))
    errordlg('Insira um valor para o nível de confiança!')
    return
end

if (~isempty(find(get(handles.edit1,'String')==44,1)))
    errordlg('Neste programa usa-se ponto  ''.''  para separar as
casas decimais!            Não use vírgulas '','' !')
     return

end

if ~isanumber(get(handles.edit1,'String'))
    errordlg('O nível de confiança precisa ser um número!')
    return
end

if eval(get(handles.edit1,'String'))>=100
    errordlg('O nível de confiança precisa ser um número menor que
100% !        Trabalha-se com Porcentagem!')
    return
end
```

```matlab
if eval(get(handles.edit1,'String'))<=0
    errordlg('O nível de confiança não pode ser zero nem um número
negativo!')
    return
end



% GIGA 02/09%%%

nc=get(handles.edit1,'String');
medicao=get(handles.radiobutton1,'Value');
metodo=[get(handles.checkbox1,'Value')
get(handles.checkbox2,'Value')];
significativo=get(handles.radiobutton6,'Value');
close
run('tela_03_entrada_de_dados')



% hObject    handle to pushbutton2 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)




% --- Executes on button press in radiobutton3.
function radiobutton3_Callback(hObject, eventdata, handles)
% hObject    handle to radiobutton3 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hint: get(hObject,'Value') returns toggle state of radiobutton3


% --- Executes on button press in radiobutton4.
function radiobutton4_Callback(hObject, eventdata, handles)
% hObject    handle to radiobutton4 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hint: get(hObject,'Value') returns toggle state of radiobutton4




% --- Executes on button press in checkbox1.
function checkbox1_Callback(hObject, eventdata, handles)
% hObject    handle to checkbox1 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hint: get(hObject,'Value') returns toggle state of checkbox1


% --- Executes on button press in checkbox2.
```

```matlab
function checkbox2_Callback(hObject, eventdata, handles)
% hObject    handle to checkbox2 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hint: get(hObject,'Value') returns toggle state of checkbox2




% --- Executes on button press in radiobutton5.
function radiobutton5_Callback(hObject, eventdata, handles)
set(handles.radiobutton5, 'Value', 1)
set(handles.radiobutton6, 'Value', 0)
% hObject    handle to radiobutton5 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hint: get(hObject,'Value') returns toggle state of radiobutton5




% --- Executes on button press in radiobutton6.
function radiobutton6_Callback(hObject, eventdata, handles)
set(handles.radiobutton5, 'Value', 0)
set(handles.radiobutton6, 'Value', 1)
% hObject    handle to radiobutton6 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hint: get(hObject,'Value') returns toggle state of radiobutton6




% --- Executes on button press in checkbox3.
function checkbox3_Callback(hObject, eventdata, handles)
%guilherme 01/04/10
global pular_tela
pular_tela = get(handles.checkbox3,'Value');
% hObject    handle to checkbox3 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hint: get(hObject,'Value') returns toggle state of checkbox3




% --- Executes on button press in checkbox4.
function checkbox4_Callback(hObject, eventdata, handles)
% hObject    handle to checkbox4 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hint: get(hObject,'Value') returns toggle state of checkbox4
estado = get(handles.checkbox4,'Value');
if estado ==1;
```

```matlab
warndlg('Ao marcar esta caixa não será realizado o método de Monte
Carlo, devido á falta de informações precisas a respeito das PDFs
combinadas das grandezas de entrada')
set(handles.checkbox2,'Value',0)
set(handles.checkbox2,'Enable','Off')
end
if estado ==0;
    set(handles.checkbox2,'Value',1)
    set(handles.checkbox2,'Enable','On')
end

tela 03
function varargout = tela_03_entrada_de_dados(varargin)
% TELA_03_ENTRADA_DE_DADOS M-file for tela_03_entrada_de_dados.fig
%      TELA_03_ENTRADA_DE_DADOS, by itself, creates a new
TELA_03_ENTRADA_DE_DADOS or raises the existing
%      singleton*.
%
%      H = TELA_03_ENTRADA_DE_DADOS returns the handle to a new
TELA_03_ENTRADA_DE_DADOS or the handle to
%      the existing singleton*.
%
%
TELA_03_ENTRADA_DE_DADOS('CALLBACK',hObject,eventData,handles,...)
calls the local
%      function named CALLBACK in TELA_03_ENTRADA_DE_DADOS.M with the
given input arguments.
%
%      TELA_03_ENTRADA_DE_DADOS('Property','Value',...) creates a new
TELA_03_ENTRADA_DE_DADOS or raises the
%      existing singleton*.  Starting from the left, property value
pairs are
%      applied to the GUI before
tela_03_entrada_de_dados_OpeningFunction gets called.  An
%      unrecognized property name or invalid value makes property
application
%      stop.  All inputs are passed to
tela_03_entrada_de_dados_OpeningFcn via varargin.
%
%      *See GUI Options on GUIDE's Tools menu.  Choose "GUI allows
only one
%      instance to run (singleton)".
%
% See also: GUIDE, GUIDATA, GUIHANDLES

% Edit the above text to modify the response to help
tela_03_entrada_de_dados

% Last Modified by GUIDE v2.5 23-Sep-2009 14:16:13

% Begin initialization code - DO NOT EDIT
gui_Singleton = 1;
gui_State = struct('gui_Name',       mfilename, ...
                   'gui_Singleton',  gui_Singleton, ...
                   'gui_OpeningFcn',
@tela_03_entrada_de_dados_OpeningFcn, ...
                   'gui_OutputFcn',
@tela_03_entrada_de_dados_OutputFcn, ...
                   'gui_LayoutFcn',  [] , ...
                   'gui_Callback',   []);
if nargin && ischar(varargin{1})
```

```matlab
    gui_State.gui_Callback = str2func(varargin{1});
end

if nargout
    [varargout{1:nargout}] = gui_mainfcn(gui_State, varargin{:});
else
    gui_mainfcn(gui_State, varargin{:});
end
% End initialization code - DO NOT EDIT


% --- Executes just before tela_03_entrada_de_dados is made visible.
function tela_03_entrada_de_dados_OpeningFcn(hObject, eventdata, handles, varargin)
global variaveis medicao pular_tela medicao
%GUILHERME 01/05/10
if pular_tela ==1
  set(handles.checkbox1,'Value',1)
  %set([handles.checkbox1],'Enable','off')
end
if pular_tela==1
set(handles.text11,'String','Incerteza padrão combinada')
set(handles.edit8,'Enable','Off')
if get(handles.radiobutton6,'Value')==1
    set(handles.edit5,'Enable','On')
    set(handles.radiobutton6,'Value',1)
end
set(handles.radiobutton5,'Enable','On')
set(handles.radiobutton6,'Enable','Off')
set(handles.text6,'String','Graus de liberdade efetivo:')
set(handles.radiobutton5,'Value',1)
set(handles.radiobutton6,'Value',0)
else
    set(handles.text11,'String','Desvio padrão experimental da média
(desvio da média)')
    set(handles.edit8,'Enable','On')
    set(handles.radiobutton5,'Enable','On')
    set(handles.text6,'String','Número de medidas:')
    set(handles.radiobutton6,'Enable','On')

end
%GUILHERME EM 30/09 IMPLEMENTANDO SUGESTÃO DE CAMILA
if pular_tela == 0
set(handles.edit1,'Enable','Off')
set(handles.edit3,'Enable','Off')
set(handles.edit2,'Enable','Off')
set(handles.edit4,'Enable','Off')
set(handles.edit5,'Enable','Off')
set(handles.edit8,'Enable','Off')
set(handles.edit6,'Enable','Off')
set(handles.edit7,'Enable','Off')
set(handles.edit9,'Enable','Off')
set(handles.edit11,'Enable','Off')
set(handles.radiobutton5,'Enable','Off')
set(handles.radiobutton6,'Enable','Off')
set(handles.checkbox1,'Enable','Off')
set(handles.radiobutton1, 'Value', 0)
set(handles.radiobutton3, 'Value', 0)
set(handles.radiobutton2, 'Value', 0)
set(handles.edit9,'String','1')
set(handles.edit11,'string','1')
```

```matlab
end
%solução problema da combinada
if pular_tela ==1
  set(handles.checkbox1,'Value',1)
  set(handles.text4,'String','Média da variável')
  %mudança polêmica em 20/10/2010 incerteza padrão combinada
  set(handles.radiobutton1, 'Value', 1)
  set(handles.radiobutton3, 'Value', 0)
  set(handles.radiobutton2, 'Value', 0)
  set(handles.radiobutton3, 'Enable', 'Off')
  set(handles.radiobutton2, 'Enable', 'Off')
  %set([handles.checkbox1],'Enable','off')
end
if pular_tela==1
set(handles.text11,'String','Incerteza padrão combinada')
set(handles.edit8,'Enable','Off')
if get(handles.radiobutton6,'Value')==1
    set(handles.edit5,'Enable','On')
    set(handles.radiobutton6,'Value',1)
end
set(handles.radiobutton5,'Enable','On')
set(handles.radiobutton6,'Enable','Off')
set(handles.text6,'String','Graus de liberdade efetivo:')
set(handles.radiobutton5,'Value',1)
set(handles.radiobutton6,'Value',0)
else
    set(handles.text11,'String','Desvio padrão experimental da média
(desvio da média)')
    set(handles.edit8,'Enable','On')
    set(handles.radiobutton5,'Enable','On')
    set(handles.text6,'String','Número de medidas:')
    set(handles.radiobutton6,'Enable','On')
end

%GIGA 02/09
set([handles.radiobutton5],'Value',1)
set([handles.edit8],'Enable','off')
%GIGA 02/09


% This function has no output args, see OutputFcn.
% hObject    handle to figure
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
% varargin   command line arguments to tela_03_entrada_de_dados (see
VARARGIN)

% Choose default command line output for tela_03_entrada_de_dados
handles.output = hObject;

% Update handles structure
guidata(hObject, handles);

% UIWAIT makes tela_03_entrada_de_dados wait for user response (see
UIRESUME)
% uiwait(handles.figure1);

if isempty(variaveis)~=1
    set(handles.listbox1,'String',variaveis.nome)
    if medicao==1
```

```matlab
    set([handles.pushbutton1],'Enable','off')%desativA o botão de add
    set([handles.pushbutton2],'Enable','on') %ativA o botão de remover
    end
end

% --- Outputs from this function are returned to the command line.
function varargout = tela_03_entrada_de_dados_OutputFcn(hObject,
eventdata, handles)
% varargout  cell array for returning output args (see VARARGOUT);
% hObject    handle to figure
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Get default command line output from handles structure
varargout{1} = handles.output;


% --- Executes on button press in pushbutton3.
function pushbutton3_Callback(hObject, eventdata, handles)
run('help_03_qualfdp')
% hObject    handle to pushbutton3 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)


% --- Executes on button press in pushbutton1.
function pushbutton1_Callback(hObject, eventdata, handles)
global n variaveis medicao pular_tela


%GIGA 02/09
botao=get(handles.radiobutton5, 'Value');

% TESTES DE ERRO
if
(isempty(get(handles.edit1,'String'))||isempty(get(handles.edit2,'Stri
ng'))...

||isempty(get(handles.edit3,'String'))||isempty(get(handles.edit4,'Str
ing'))...

||isempty(get(handles.edit6,'String'))||isempty(get(handles.edit7,'Str
ing')))...

||isempty(get(handles.edit11,'String'))||isempty(get(handles.edit9,'St
ring'))
    errordlg('Todas as lacunas devem ser preenchidas para adicionar a
grandeza!')
    return
end
if botao==1

        if isempty(get(handles.edit5,'String'))
        errordlg('Todas as lacunas devem ser preenchidas para
adicionar a grandeza!')
        return
        end

else
```

```matlab
        if isempty(get(handles.edit8,'String'))
        errordlg('Todas as lacunas devem ser preenchidas para
adicionar a grandeza!')
        return
        end

    end

    if (~isempty(find(get(handles.edit4,'String') == 44,
1))||~isempty(find(get(handles.edit6,'String') == 44, 1))...
        ||~isempty(find(get(handles.edit7,'String') == 44,
1))||~isempty(find(get(handles.edit9,'String') == 44, 1)))
        errordlg('Neste programa usa-se ponto  ''.''  para separar as
casas decimais!            Não use vírgulas '','' !')
        return

    end

    if botao==1
        if ~isempty(find(get(handles.edit5,'String') == 44, 1))
            errordlg('Neste programa usa-se ponto  ''.''  para separar
as casas decimais!            Não use vírgulas '','' !')
            return
        end
    else
        if ~isempty(find(get(handles.edit8,'String') == 44, 1))
            errordlg('Neste programa usa-se ponto  ''.''  para separar
as casas decimais!            Não use vírgulas '','' !')
            return
        end

    end

    if
~isanumber(get(handles.edit6,'String'))||~isanumber(get(handles.edit4,
'String'))...

||~isanumber(get(handles.edit7,'String'))||~isanumber(get(handles.edit
9,'String'))
        errordlg('Média da grandeza, Desvio padrão experimental da média
(ou da amostra) ou Limite Superior, Número de medidas (ou Graus de
Liberdade Efetivos), Correção e Coeficiente de Sensibilidade precisam
ser números!')
        return

    end

    if botao==1
        if ~isanumber(get(handles.edit5,'String'))
            errordlg('Média da grandeza, Desvio padrão experimental da
média (ou da amostra) ou Limite Superior, Número de medidas (ou Graus
de Liberdade Efetivos), Correção e Coeficiente de Sensibilidade
precisam ser números!')
            return
        end

    else
        if ~isanumber(get(handles.edit8,'String'))
```

```matlab
            errordlg('Média da grandeza, Desvio padrão experimental da
média (ou da amostra) ou Limite Superior, Número de medidas (ou Graus
de Liberdade Efetivos), Correção e Coeficiente de Sensibilidade
precisam ser números!')
            return
        end

end


if eval(get(handles.edit6,'String')) <= 1
    errordlg('É necessário um número de medidas maior que 1!')
    return

elseif (eval(get(handles.edit6,'String'))-
floor(eval(get(handles.edit6,'String'))))~= 0
    if ~strcmp('inf',get(handles.edit6,'String'))
    errordlg('Não existe número de medida fracionado!')
    return
    end
end

% TESTES DE ERRO
%GIGA 02/09




if isempty(n)==1
n=0;
end
n=n+1;
variaveis.nome(n)={get(handles.edit1,'String')};
variaveis.unidade(n)={get(handles.edit3,'String')};
variaveis.simbolo(n)={get(handles.edit2,'String')};
variaveis.media(n)={get(handles.edit4,'String')};
variaveis.medidas(n)={get(handles.edit6,'String')};
variaveis.sensibilidade(n)={get(handles.edit9,'String')};
variaveis.unit_sensibilidade(n)={get(handles.edit11,'String')};

if botao==1
variaveis.desvio(n)={get(handles.edit5,'String')};
else

variaveis.desvio(n)={num2str(str2num(get(handles.edit8,'String'))/sqrt
(str2num(get(handles.edit6,'String'))))};
%variaveis.desvio(n) = num2str(variaveis.desvio(n));
end

variaveis.fdp(n)={find([get(handles.radiobutton1,'Value'),get(handles.
radiobutton2,'Value'),...
    get(handles.radiobutton3,'Value')])}; % o valor 1 representa
gaussiana, 2 triangular e 3 retangular
variaveis.correcao(n)={get(handles.edit7,'String')};
variaveis.media(n)={num2str(str2double(variaveis.sensibilidade(n))*(st
r2double(cell2mat(variaveis.media(n)))+str2double(cell2mat(variaveis.c
orrecao(n)))))}; %fazendo a correcao

set(handles.listbox1,'String',variaveis.nome)
```

```matlab
% hObject    handle to pushbutton1 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
if n>0
     set([handles.pushbutton2],'Enable','on')
end
set(handles.edit1,'string','')
set(handles.edit2,'string','')
set(handles.edit3,'string','')
set(handles.edit4,'string','')
set(handles.edit5,'string','')
set(handles.edit6,'string','')
set(handles.edit7,'string','')
set(handles.edit8,'string','')

%GIGA 6/10 %%%
set(handles.edit9,'String','1')
set(handles.edit11,'string','1')
%GIGA 6/10 %%%

if medicao==1
     close
run('tela_04_incerteza_tipoB')
else
%guilherme
if pular_tela == 0
set(handles.edit1,'Enable','Off')
set(handles.edit3,'Enable','Off')
set(handles.edit2,'Enable','Off')
set(handles.edit4,'Enable','Off')
set(handles.edit5,'Enable','Off')
set(handles.edit8,'Enable','Off')
set(handles.edit6,'Enable','Off')
set(handles.edit7,'Enable','Off')
set(handles.edit9,'Enable','Off')
set(handles.edit11,'Enable','Off')
set(handles.radiobutton5,'Enable','Off')
set(handles.radiobutton6,'Enable','Off')
set(handles.checkbox1,'Value',0)
set(handles.checkbox1,'Enable','Off')
set(handles.radiobutton1, 'Value', 0)
set(handles.radiobutton3, 'Value', 0)
set(handles.radiobutton2, 'Value', 0)
set(handles.radiobutton1, 'Enable', 'On')
set(handles.radiobutton3, 'Enable', 'On')
set(handles.radiobutton2, 'Enable', 'On')
end
if pular_tela ==1
  set(handles.checkbox1,'Value',1)
  set(handles.text4,'String','Média da variável')
  %mudança polêmica em 20/10/2010 incerteza padrão combinada
  set(handles.radiobutton1, 'Value', 1)
  set(handles.radiobutton3, 'Value', 0)
  set(handles.radiobutton2, 'Value', 0)
  set(handles.radiobutton3, 'Enable', 'Off')
  set(handles.radiobutton2, 'Enable', 'Off')
  %set([handles.checkbox1],'Enable','off')
end
if pular_tela==1
```

```matlab
set(handles.text11,'String','Incerteza padrão combinada')
set(handles.edit8,'Enable','Off')
if get(handles.radiobutton6,'Value')==1
    set(handles.edit5,'Enable','On')
    set(handles.radiobutton6,'Value',1)
end
set(handles.radiobutton5,'Enable','On')
set(handles.radiobutton6,'Enable','Off')
set(handles.text6,'String','Graus de liberdade efetivo:')
set(handles.radiobutton5,'Value',1)
set(handles.radiobutton6,'Value',0)
else
    set(handles.text11,'String','Desvio padrão experimental da média
(desvio da média)')
    set(handles.edit8,'Enable','Off')
    set(handles.radiobutton5,'Enable','On')
    set(handles.text6,'String','Número de medidas:')
    set(handles.radiobutton6,'Enable','On')
end
end


% --- Executes on button press in pushbutton2.
function pushbutton2_Callback(hObject, eventdata, handles)
global n variaveis
if isempty(n)==0
    n=n-1;
end
currentVal = get(handles.listbox1,'Value'); %guilherme
%este comando pega o valor que está selecionado no listbox é um número
de 1 ao número de variáveis adcionadas
resultsStr = get(handles.listbox1,'String');
%este comando pega a variável que armazena os nomes do listbox
numResults = size(resultsStr,1);
%este comando cálcula o número de variáveis que temos no listbox
%---------------------------------------------------------------
-----
%REMOVENDO OS VALORES DO LISTBOX E DA VARIAVEL
  % Remove the data and list entry for the selected value
  resultsStr(currentVal) =[];
  %transforma em vazio o local do listbox selecionado
variaveis.nome(currentVal)=[];
variaveis.unidade(currentVal)=[];
variaveis.simbolo(currentVal)=[];
variaveis.media(currentVal)=[];
variaveis.desvio(currentVal)=[];
variaveis.medidas(currentVal)=[];
variaveis.fdp(currentVal)=[];
variaveis.correcao(currentVal)=[];
  %exclui o resultado da varável que armazena os resultados
 %---------------------------------------------------------------
-----
 %DESABILITANDO O BOTÃO SE NÃO TEMOS MAIS VARIÁVEIS A SER REMOVIDAS
%MUDA A LISTA DE STRINGS PARA VAZIO
if isequal(numResults,length(currentVal)),%se for igual o número de
variáveis a 1
    resultsStr = {'<empty>'};%esvazia o listbox
    currentVal = 1;% e faz o valor selecionado igual a 1
    set([handles.pushbutton2],'Enable','off')%desativA o botão de
remove
    set([handles.pushbutton1],'Enable','on')
end
```

```matlab
%-------------------------------------------------------------------
---
%TRANSFORMA O CURRENTVAL(NÚMERO INTEIRO QUE CORRESPONDE A VALUE)NO
MENOR
%VALOR ENTRE O ANTIGO VALUE E O TAMANHO DO STRING QUE ESTÁ NO LISTBOX
(NÚMERO DE VARIÁVEIS)
currentVal = min(currentVal,size(resultsStr,1));
%-------------------------------------------------------------------
-----
set(handles.listbox1,'Value',currentVal,'String',resultsStr)

% hObject    handle to pushbutton2 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)




function edit1_Callback(hObject, eventdata, handles)
% hObject    handle to edit1 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of edit1 as text
%        str2double(get(hObject,'String')) returns contents of edit1
as a double


% --- Executes during object creation, after setting all properties.
function edit1_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit1 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end




function edit2_Callback(hObject, eventdata, handles)
% hObject    handle to edit2 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of edit2 as text
%        str2double(get(hObject,'String')) returns contents of edit2
as a double


% --- Executes during object creation, after setting all properties.
function edit2_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit2 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called
```

```matlab
% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end



function edit3_Callback(hObject, eventdata, handles)
% hObject    handle to edit3 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of edit3 as text
%        str2double(get(hObject,'String')) returns contents of edit3
as a double


% --- Executes during object creation, after setting all properties.
function edit3_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit3 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end


% --- Executes on selection change in listbox1.
function listbox1_Callback(hObject, eventdata, handles)
% hObject    handle to listbox1 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: contents = get(hObject,'String') returns listbox1 contents as
cell array
%        contents{get(hObject,'Value')} returns selected item from
listbox1


% --- Executes during object creation, after setting all properties.
function listbox1_CreateFcn(hObject, eventdata, handles)
% hObject    handle to listbox1 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: listbox controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
```

```matlab
end




function edit4_Callback(hObject, eventdata, handles)
% hObject    handle to edit4 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of edit4 as text
%        str2double(get(hObject,'String')) returns contents of edit4
as a double


% --- Executes during object creation, after setting all properties.
function edit4_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit4 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end




function edit5_Callback(hObject, eventdata, handles)
% hObject    handle to edit5 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of edit5 as text
%        str2double(get(hObject,'String')) returns contents of edit5
as a double


% --- Executes during object creation, after setting all properties.
function edit5_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit5 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end




function edit6_Callback(hObject, eventdata, handles)
% hObject    handle to edit6 (see GCBO)
```

```matlab
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of edit6 as text
%        str2double(get(hObject,'String')) returns contents of edit6
as a double



% --- Executes during object creation, after setting all properties.
function edit6_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit6 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end



% --- Executes on button press in radiobutton1.
function radiobutton1_Callback(hObject, eventdata, handles)
global pular_tela
%GUILHERME EM 27/10/2010

%GUILHERME 30/09
if pular_tela == 0
set(handles.edit1,'Enable','On')
set(handles.edit3,'Enable','On')
set(handles.edit2,'Enable','On')
set(handles.edit4,'Enable','On')
set(handles.edit5,'Enable','On')
set(handles.edit8,'Enable','Off')
set(handles.edit6,'Enable','On')
set(handles.edit7,'Enable','On')
set(handles.edit9,'Enable','On')
set(handles.edit11,'Enable','On')
set(handles.radiobutton5,'Enable','On')
set(handles.radiobutton6,'Enable','On')
set(handles.checkbox1,'Enable','On')
%--------------------------------------------------
set(handles.radiobutton2, 'Value', 0)
set(handles.radiobutton3, 'Value', 0)
set(handles.radiobutton1, 'Value', 1)
set(handles.edit4,'String','')
set(handles.edit11,'String','')
set(handles.text4,'String','Média da variável')
set(handles.text11,'String','Desvio padrão experimental da média
(desvio da média)')
set(handles.radiobutton6,'Enable','On')
set(handles.edit9,'String','1')
set(handles.edit11,'string','1')
end

if pular_tela ==1
  set(handles.checkbox1,'Value',1)
```

```matlab
    set(handles.text4,'String','Média da variável')
    %mudança polêmica em 20/10/2010 incerteza padrão combinada
    set(handles.radiobutton1, 'Value', 1)
    set(handles.radiobutton3, 'Value', 0)
    set(handles.radiobutton2, 'Value', 0)
    set(handles.radiobutton3, 'Enable', 'Off')
    set(handles.radiobutton2, 'Enable', 'Off')
    %set([handles.checkbox1],'Enable','off')
end
if pular_tela==1
set(handles.text11,'String','Incerteza padrão combinada')
set(handles.edit8,'Enable','Off')
if get(handles.radiobutton6,'Value')==1
    set(handles.edit5,'Enable','On')
    set(handles.radiobutton6,'Value',1)
end
set(handles.radiobutton5,'Enable','On')
set(handles.radiobutton6,'Enable','Off')
set(handles.text6,'String','Graus de liberdade efetivo:')
set(handles.radiobutton5,'Value',1)
set(handles.radiobutton6,'Value',0)
% else
%     set(handles.text11,'String','Desvio padrão experimental da média
(desvio da média)')
%     set(handles.edit8,'Enable','On')
%     set(handles.radiobutton5,'Enable','On')
%     set(handles.text6,'String','Número de medidas:')
%     set(handles.radiobutton6,'Enable','On')
end
% hObject    handle to radiobutton1 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hint: get(hObject,'Value') returns toggle state of radiobutton1


% --- Executes on button press in radiobutton2.
function radiobutton2_Callback(hObject, eventdata, handles)
global pular_tela

%GUILHERME 30/09/10
if pular_tela ==0
set(handles.edit1,'Enable','On')
set(handles.edit3,'Enable','On')
set(handles.edit2,'Enable','On')
set(handles.edit4,'Enable','On')
set(handles.edit5,'Enable','On')
set(handles.edit8,'Enable','Off')
set(handles.edit6,'Enable','On')
set(handles.edit7,'Enable','On')
set(handles.edit9,'Enable','On')
set(handles.edit11,'Enable','On')
set(handles.radiobutton5,'Enable','On')
set(handles.radiobutton6,'Enable','On')
set(handles.checkbox1,'Enable','On')
set(handles.checkbox1,'Value',0)

%----------------------------------------
set(handles.radiobutton2, 'Value', 1)
set(handles.radiobutton3, 'Value', 0)
```

```matlab
set(handles.radiobutton1, 'Value', 0)
set(handles.edit4,'String','')
set(handles.edit11,'String','')
set(handles.text4,'String','Limite Superior')
set(handles.text11,'String','Limite Inferior')
set(handles.radiobutton6,'Enable','Off')
set(handles.edit9,'String','1')
set(handles.edit11,'string','1')
end

%GUILHERME EM 27/10/2010
if pular_tela ==1
  set(handles.checkbox1,'Value',1)
  set(handles.text4,'String','Média da variável')
  %mudança polêmica em 20/10/2010 incerteza padrão combinada
  set(handles.radiobutton1, 'Value', 1)
  set(handles.radiobutton3, 'Value', 0)
  set(handles.radiobutton2, 'Value', 0)
  set(handles.radiobutton3, 'Enable', 'Off')
  set(handles.radiobutton2, 'Enable', 'Off')
  %set([handles.checkbox1],'Enable','off')
end
if pular_tela==1
set(handles.text11,'String','Incerteza padrão combinada')
set(handles.edit8,'Enable','Off')
if get(handles.radiobutton6,'Value')==1
    set(handles.edit5,'Enable','On')
    set(handles.radiobutton6,'Value',1)
end
set(handles.radiobutton5,'Enable','On')
set(handles.radiobutton6,'Enable','Off')
set(handles.text6,'String','Graus de liberdade efetivo:')
set(handles.radiobutton5,'Value',1)
set(handles.radiobutton6,'Value',0)
% else
%     set(handles.text11,'String','Desvio padrão experimental da média
(desvio da média)')
%     set(handles.edit8,'Enable','On')
%     set(handles.radiobutton5,'Enable','On')
%     set(handles.text6,'String','Número de medidas:')
%     set(handles.radiobutton6,'Enable','On')
end

% hObject    handle to radiobutton2 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hint: get(hObject,'Value') returns toggle state of radiobutton2


% --- Executes on button press in radiobutton3.
function radiobutton3_Callback(hObject, eventdata, handles)
global pular_tela
%GUILHERME EM 27/10/2010

%GUILHERME 30/09/10
if pular_tela ==1
  set(handles.checkbox1,'Value',1)
  set(handles.text4,'String','Média da variável')
  %mudança polêmica em 20/10/2010 incerteza padrão combinada
```

```matlab
    set(handles.radiobutton1, 'Value', 1)
    set(handles.radiobutton3, 'Value', 0)
    set(handles.radiobutton2, 'Value', 0)
    set(handles.radiobutton3, 'Enable', 'Off')
    set(handles.radiobutton2, 'Enable', 'Off')
    %set([handles.checkbox1],'Enable','off')
else
set(handles.edit1,'Enable','On')
set(handles.edit3,'Enable','On')
set(handles.edit2,'Enable','On')
set(handles.edit4,'Enable','On')
set(handles.edit5,'Enable','On')
set(handles.edit8,'Enable','Off')
set(handles.edit6,'Enable','On')
set(handles.edit7,'Enable','On')
set(handles.edit9,'Enable','On')
set(handles.edit11,'Enable','On')
set(handles.radiobutton5,'Enable','On')
set(handles.radiobutton6,'Enable','On')
set(handles.checkbox1,'Enable','On')
%------------------------------------------
set(handles.radiobutton1, 'Value', 0)
set(handles.radiobutton3, 'Value', 1)
set(handles.radiobutton2, 'Value', 0)
set(handles.edit4,'String','')
set(handles.edit11,'String','')
set(handles.text4,'String','Limite Superior')
set(handles.text11,'String','Limite Inferior')
set(handles.radiobutton6,'Enable','Off')
set(handles.edit9,'String','1')
set(handles.edit11,'string','1')
end
if pular_tela==1
set(handles.text11,'String','Incerteza padrão combinada')
set(handles.edit8,'Enable','Off')
if get(handles.radiobutton6,'Value')==1
    set(handles.edit5,'Enable','On')
    set(handles.radiobutton6,'Value',1)
end
set(handles.radiobutton5,'Enable','On')
set(handles.radiobutton6,'Enable','Off')
set(handles.text6,'String','Graus de liberdade efetivo:')
set(handles.radiobutton5,'Value',1)
set(handles.radiobutton6,'Value',0)
% else
%     set(handles.text11,'String','Desvio padrão experimental da média
(desvio da média)')
%     set(handles.edit8,'Enable','On')
%     set(handles.radiobutton5,'Enable','On')
%     set(handles.text6,'String','Número de medidas:')
%     set(handles.radiobutton6,'Enable','On')
end
% hObject    handle to radiobutton3 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hint: get(hObject,'Value') returns toggle state of radiobutton3



% --- Executes on button press in pushbutton4.
function pushbutton4_Callback(hObject, eventdata, handles)
```

```matlab
global variaveis pular_tela

if isempty(variaveis)==1
    errordlg('É preciso adicionar pelo menos uma variável de
entrada!')
    return
end
if isempty(get(handles.edit1,'String'))==0
    errordlg('Adicione a grandeza apertando o botão "Adicionar
Grandeza"                    Caso não queira adicionar essa
grandeza, apague o nome e siga com o programa.')

    return
end
close
if pular_tela==0
run('tela_04_incerteza_tipoB')
else
    run('tela_05_modelo')
end

% hObject    handle to pushbutton4 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)


% --- Executes on button press in pushbutton5.
function pushbutton5_Callback(hObject, eventdata, handles)
close
run('tela_02_medicao')
% hObject    handle to pushbutton5 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)




function edit7_Callback(hObject, eventdata, handles)
% hObject    handle to edit7 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of edit7 as text
%        str2double(get(hObject,'String')) returns contents of edit7
as a double


% --- Executes during object creation, after setting all properties.
function edit7_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit7 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
```

```matlab
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end




function edit8_Callback(hObject, eventdata, handles)
% hObject    handle to edit8 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of edit8 as text
%        str2double(get(hObject,'String')) returns contents of edit8
as a double


% --- Executes during object creation, after setting all properties.
function edit8_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit8 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end


% --- Executes on button press in radiobutton5.
function radiobutton5_Callback(hObject, eventdata, handles)
% hObject    handle to radiobutton5 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
set(handles.radiobutton5, 'Value', 1)
set(handles.radiobutton6, 'Value', 0)
set(handles.edit5, 'Enable', 'on')
set(handles.edit8, 'Enable', 'off')
% Hint: get(hObject,'Value') returns toggle state of radiobutton5


% --- Executes on button press in radiobutton6.
function radiobutton6_Callback(hObject, eventdata, handles)
set(handles.radiobutton5, 'Value', 0)
set(handles.radiobutton6, 'Value', 1)
set(handles.edit5, 'Enable', 'off')
set(handles.edit8, 'Enable', 'on')
% hObject    handle to radiobutton6 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hint: get(hObject,'Value') returns toggle state of radiobutton6
```

```matlab
function edit9_Callback(hObject, eventdata, handles)
% hObject    handle to edit9 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of edit9 as text
%        str2double(get(hObject,'String')) returns contents of edit9
as a double


% --- Executes during object creation, after setting all properties.
function edit9_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit9 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%        See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end




% --- Executes on button press in checkbox1.
function checkbox1_Callback(hObject, eventdata, handles)
global pular_tela
if pular_tela ==1
  set(handles.checkbox1,'Value',1)
  errordlg('Você escolheu na tela anterior entrar para todas as
grandezas com a incerteza padrão combinada!')

  %mudança polêmica da incerteza padrão combinada
  set(handles.radiobutton1, 'Value', 1)
  set(handles.radiobutton3, 'Value', 0)
  set(handles.radiobutton2, 'Value', 0)
  set(handles.radiobutton3, 'Enable', 'Off')
  set(handles.radiobutton2, 'Enable', 'Off')
  %set([handles.checkbox1],'Enable','off')
end

if get(handles.checkbox1,'Value')==1
set(handles.text11,'String','Incerteza padrão combinada')
set(handles.edit8,'Enable','Off')
%mudança polêmica
set(handles.radiobutton1, 'Value', 1)
  set(handles.radiobutton3, 'Value', 0)
  set(handles.radiobutton2, 'Value', 0)
  set(handles.radiobutton3, 'Enable', 'Off')
  set(handles.radiobutton2, 'Enable', 'Off')
if get(handles.radiobutton6,'Value')==1
    set(handles.edit5,'Enable','On')
```

```matlab
        set(handles.radiobutton6,'Value',1)
    end
    set(handles.radiobutton5,'Enable','On')
    set(handles.radiobutton6,'Enable','Off')
    set(handles.text6,'String','Graus de liberdade efetivo:')
    set(handles.text4,'String','Média da grandeza')
    set(handles.radiobutton6,'Value',0)
    else
        set(handles.text11,'String','Desvio padrão experimental da média
    (desvio da média)')
        set(handles.edit8,'Enable','On')
        set(handles.radiobutton5,'Enable','On')
        set(handles.text6,'String','Número de medidas:')
        set(handles.radiobutton6,'Enable','On')
        %mudança polêmica continuação 28/10
        set(handles.radiobutton1, 'Value', 1)
      set(handles.radiobutton3, 'Value', 0)
      set(handles.radiobutton2, 'Value', 0)
      set(handles.radiobutton3, 'Enable', 'On')
      set(handles.radiobutton2, 'Enable', 'On')
    end


% hObject    handle to checkbox1 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hint: get(hObject,'Value') returns toggle state of checkbox1




function edit11_Callback(hObject, eventdata, handles)
% hObject    handle to edit11 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of edit11 as text
%        str2double(get(hObject,'String')) returns contents of edit11
as a double


% --- Executes during object creation, after setting all properties.
function edit11_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit11 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end




function edit12_Callback(hObject, eventdata, handles)
```

```matlab
% hObject    handle to edit5 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of edit5 as text
%        str2double(get(hObject,'String')) returns contents of edit5
as a double


% --- Executes during object creation, after setting all properties.
function edit12_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit5 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%        See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end


function edit13_Callback(hObject, eventdata, handles)
% hObject    handle to edit8 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of edit8 as text
%        str2double(get(hObject,'String')) returns contents of edit8
as a double


% --- Executes during object creation, after setting all properties.
function edit13_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit8 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%        See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end


% --- Executes on button press in radiobutton5.
function radiobutton7_Callback(hObject, eventdata, handles)
% hObject    handle to radiobutton5 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hint: get(hObject,'Value') returns toggle state of radiobutton5
```

```matlab
% --- Executes on button press in radiobutton6.
function radiobutton8_Callback(hObject, eventdata, handles)
% hObject    handle to radiobutton6 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)


% Hint: get(hObject,'Value') returns toggle state of radiobutton6




% --- Executes on button press in pushbutton6.
function pushbutton6_Callback(hObject, eventdata, handles)
run('help_coeficiente_de_sensibilidade')
% hObject    handle to pushbutton6 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)


Tela 04
function varargout = tela_04_incerteza_tipoB(varargin)

% TELA_04_INCERTEZA_TIPOB M-file for tela_04_incerteza_tipoB.fig
%      TELA_04_INCERTEZA_TIPOB, by itself, creates a new
TELA_04_INCERTEZA_TIPOB or raises the existing
%      singleton*.
%
%      H = TELA_04_INCERTEZA_TIPOB returns the handle to a new
TELA_04_INCERTEZA_TIPOB or the handle to
%      the existing singleton*.
%
%
TELA_04_INCERTEZA_TIPOB('CALLBACK',hObject,eventData,handles,...)
calls the local
%      function named CALLBACK in TELA_04_INCERTEZA_TIPOB.M with the
given input arguments.
%
%      TELA_04_INCERTEZA_TIPOB('Property','Value',...) creates a new
TELA_04_INCERTEZA_TIPOB or raises the
%      existing singleton*.  Starting from the left, property value
pairs are
%      applied to the GUI before
tela_04_incerteza_tipoB_OpeningFunction gets called.  An
%      unrecognized property name or invalid value makes property
application
%      stop.  All inputs are passed to
tela_04_incerteza_tipoB_OpeningFcn via varargin.
%
%      *See GUI Options on GUIDE's Tools menu.  Choose "GUI allows
only one
%      instance to run (singleton)".
%
% See also: GUIDE, GUIDATA, GUIHANDLES

% Edit the above text to modify the response to help
tela_04_incerteza_tipoB

% Last Modified by GUIDE v2.5 23-Sep-2009 11:03:30
```

```matlab
% Begin initialization code - DO NOT EDIT
gui_Singleton = 1;
gui_State = struct('gui_Name',       mfilename, ...
                   'gui_Singleton',  gui_Singleton, ...
                   'gui_OpeningFcn',
@tela_04_incerteza_tipoB_OpeningFcn, ...
                   'gui_OutputFcn',
@tela_04_incerteza_tipoB_OutputFcn, ...
                   'gui_LayoutFcn',  [] , ...
                   'gui_Callback',   []);
if nargin && ischar(varargin{1})
    gui_State.gui_Callback = str2func(varargin{1});
end

if nargout
    [varargout{1:nargout}] = gui_mainfcn(gui_State, varargin{:});
else
    gui_mainfcn(gui_State, varargin{:});
end
% End initialization code - DO NOT EDIT


% --- Executes just before tela_04_incerteza_tipoB is made visible.
function tela_04_incerteza_tipoB_OpeningFcn(hObject, eventdata,
handles, varargin)
global list variaveis
% This function has no output args, see OutputFcn.
% hObject    handle to figure
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
% varargin   command line arguments to tela_04_incerteza_tipoB (see
VARARGIN)

% Choose default command line output for tela_04_incerteza_tipoB
handles.output = hObject;

% Update handles structure
guidata(hObject, handles);

% UIWAIT makes tela_04_incerteza_tipoB wait for user response (see
UIRESUME)
% uiwait(handles.figure1);
if isempty(list)~=1
    eval(['set(handles.listbox2,' '''String''' ',list.'
cell2mat(variaveis.simbolo(1)) ')'])
end


% --- Outputs from this function are returned to the command line.
function varargout = tela_04_incerteza_tipoB_OutputFcn(hObject,
eventdata, handles)
% varargout  cell array for returning output args (see VARARGOUT);
% hObject    handle to figure
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Get default command line output from handles structure
varargout{1} = handles.output;
```

```matlab
% --- Executes on button press in pushbutton10.
function pushbutton10_Callback(hObject, eventdata, handles)
% % hObject    handle to pushbutton10 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
run('help_03_qualfdp')

% --- Executes on button press in pushbutton6.
function pushbutton6_Callback(hObject, eventdata, handles)
global nb incertezaB variaveis vazios valorsel list

% GIGA 6/10/9 %%%
%Testes de erro

if
(isempty(get(handles.edit4,'String'))||isempty(get(handles.edit5,'Stri
ng'))...

||isempty(get(handles.edit6,'String'))||isempty(get(handles.edit7,'Str
ing'))...

||isempty(get(handles.edit8,'String'))||isempty(get(handles.edit9,'Str
ing')))
    errordlg('Todas as lacunas devem ser preenchidas para adicionar a
incerteza tipo B!')
    return
end

if (~isempty(find(get(handles.edit4,'String') == 44,
1))||~isempty(find(get(handles.edit5,'String') == 44, 1))...
        ||~isempty(find(get(handles.edit6,'String') == 44, 1)))
      errordlg('Neste programa usa-se ponto  ''.''  para separar as
casas decimais!          Não use vírgulas '',''  !')
      return

elseif
~isanumber(get(handles.edit4,'String'))||~isanumber(get(handles.edit5,
'String'))...
    ||~isanumber(get(handles.edit6,'String'))
    errordlg('Valor da incerteza tipo B, Graus de liberdade e
Coeficiente de sensibilidade precisam ser números!')
    return
end




%Testes de erro
%GIGA 6/10/9 %%%


n=get(handles.popupmenu2,'Value');
if isempty(incertezaB)
    vazios=zeros(1,length(variaveis.nome));
    vazios(n)=1; %matriz q diz se jah foi colacada incerteza do tipo B
a uma variavel
```

```matlab
    nb=0;
elseif vazios(n)==0
    vazios(n)=1;
    nb=0;
else
    eval(['nb=length(incertezaB.' cell2mat(variaveis.simbolo(n))
'.valor);'])
end
nb=nb+1;

eval(['incertezaB.' cell2mat(variaveis.simbolo(n))
'.unidade(nb)={get(handles.edit8,' '''String''' ')};']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(n))
'.valor(nb)=str2num(get(handles.edit4,' '''String''' '));']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(n))
'.liberdade(nb)=str2num(get(handles.edit6,' '''String''' '));']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(n))
'.sensibilidade(nb)=str2num(get(handles.edit5,' '''String''' '));']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(n))
'.nome(nb)={get(handles.edit7,' '''String''' ')};']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(n))
'.unid_sensi(nb)={get(handles.edit9,' '''String''' ')};']);
% eval(['incertezaB.' cell2mat(variaveis.simbolo(nb))
'.fdp(nb)={get(handles.edit4,' 'String' ')};']);
% incertezaB.liberdade(nb)={get(handles.edit6,'String')};
% incertezaB.sensibilidade(nb)={get(handles.edit5,'String')};
eval(['incertezaB.' cell2mat(variaveis.simbolo(n))
'.fdp(nb)={find([get(handles.radiobutton4,' '''Value'''
'),get(handles.radiobutton5,' '''Value''' '),'...
    'get(handles.radiobutton6,' '''Value''' ')])};']); % o valor 1
representa gaussiana, 3 triangular e 3 retangular

% hObject    handle to pushbutton6 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
valorsel = get(handles.popupmenu2,'Value');

t=cellstr([cell2mat(eval(['incertezaB.'
cell2mat(variaveis.simbolo(valorsel)) '.nome(nb)']))...
    '         ' num2str(eval(['incertezaB.'
cell2mat(variaveis.simbolo(valorsel)) '.valor(nb)']))...
    ' ' cell2mat(eval(['incertezaB.'
cell2mat(variaveis.simbolo(valorsel)) '.unidade(nb)']))]);
eval(['list.' cell2mat(variaveis.simbolo(n)) '(nb,:)=t;'])
eval(['set(handles.listbox2,' '''String''' ',list.'
cell2mat(variaveis.simbolo(n)) ')'])
set(handles.edit7,'string','')
set(handles.edit4,'string','')
set(handles.edit5,'string','')
set(handles.edit6,'string','')
set(handles.edit8,'string','')
set(handles.edit9,'string','')

set([handles.pushbutton7],'Enable','on')

% --- Executes on button press in pushbutton7.
function pushbutton7_Callback(hObject, eventdata, handles)
global nb vazios variaveis incertezaB list
if isempty(nb)==0
    nb=nb-1;
```

```matlab
    end
valorsel = get(handles.popupmenu2,'Value');
currentVal= get(handles.listbox2,'Value');
%este comando pega o valor que está selecionado no listbox é um número
de 1 ao número de variáveis adcionadas
resultsStr = get(handles.listbox2,'String');
%este comando pega a variável que armazena os nomes do listbox
numResults = size(resultsStr,1);
%este comando cálcula o número de variáveis que temos no listbox
resultsStr(currentVal) =[];
eval(['list.' cell2mat(variaveis.simbolo(valorsel)) '=resultsStr']);
  %transforma em vazio o local do listbox selecionado

%ver qual variavel está selecionada no listbox
eval(['incertezaB.' cell2mat(variaveis.simbolo(valorsel))
'.unidade(currentVal)=[];']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(valorsel))
'.valor(currentVal)=[];']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(valorsel))
'.liberdade(currentVal)=[];']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(valorsel))
'.sensibilidade(currentVal)=[];']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(valorsel))
'.nome(currentVal)=[];']);
% eval(['incertezaB.' cell2mat(variaveis.simbolo(nb))
'.fdp(nb)={get(handles.edit4,' 'String' ')};']);
% incertezaB.liberdade(nb)={get(handles.edit6,'String')};
% incertezaB.sensibilidade(nb)={get(handles.edit5,'String')};
eval(['incertezaB.' cell2mat(variaveis.simbolo(valorsel))
'.fdp(currentVal)=[];']);
if numResults ==0
   vazios(currentVal)=[];
end
 %DESABILITANDO O BOTÃO SE NÃO TEMOS MAIS VARIÁVEIS A SER REMOVIDAS
%MUDA A LISTA DE STRINGS PARA VAZIO
if isequal(numResults,length(currentVal)),%se for igual o número de
variáveis a 1
    resultsStr = {'<empty>'};%esvazia o listbox
    currentVal = 1;% e faz o valor selecionado igual a 1
    eval(['list.' cell2mat(variaveis.simbolo(valorsel))
'=resultsStr']);
    set([handles.pushbutton7],'Enable','off')%desativA o botão de
remover
end
 %-------------------------------------------------------------------
----
%TRANSFORMA O CURRENTVAL(NÚMERO INTEIRO QUE CORRESPONDE A VALUE)NO
MENOR
%VALOR ENTRE O ANTIGO VALUE E O TAMANHO DO STRING QUE ESTÁ NO LISTBOX
(NÚMERO DE VARIÁVEIS)
currentVal = min(currentVal,size(resultsStr,1));
set(handles.listbox2,'Value',currentVal,'String',resultsStr)

%-------------------------------------------------------
% hObject    handle to pushbutton7 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)


% --- Executes on selection change in listbox2.
% hObject    handle to pushbutton7 (see GCBO)
```

```matlab
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)


% --- Executes on selection change in listbox2.
function listbox2_Callback(hObject, eventdata, handles)
% hObject    handle to listbox2 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: contents = get(hObject,'String') returns listbox2 contents as
% cell array
%        contents{get(hObject,'Value')} returns selected item from
% listbox2


% --- Executes during object creation, after setting all properties.
function listbox2_CreateFcn(hObject, eventdata, handles)
% hObject    handle to listbox2 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
% called

% Hint: listbox controls usually have a white background on Windows.
%        See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end


% --- Executes on button press in radiobutton4.
function radiobutton4_Callback(hObject, eventdata, handles)
set(handles.radiobutton5, 'Value', 0)
set(handles.radiobutton6, 'Value', 0)
set(handles.radiobutton4, 'Value', 1)
set(handles.text6,'String','Valor da incerteza do tipo B')
% hObject    handle to radiobutton4 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hint: get(hObject,'Value') returns toggle state of radiobutton4


% --- Executes on button press in radiobutton5.
function radiobutton5_Callback(hObject, eventdata, handles)
set(handles.radiobutton4, 'Value', 0)
set(handles.radiobutton6, 'Value', 0)
set(handles.radiobutton5, 'Value', 1)
set(handles.text6,'String','Amplitude (Max-Min)')
% hObject    handle to radiobutton5 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hint: get(hObject,'Value') returns toggle state of radiobutton5


% --- Executes on button press in radiobutton6.
function radiobutton6_Callback(hObject, eventdata, handles)
```

```matlab
set(handles.radiobutton4, 'Value', 0)
set(handles.radiobutton5, 'Value', 0)
set(handles.radiobutton6, 'Value', 1)
set(handles.text6,'String','Amplitude (Max-Min)')
% hObject    handle to radiobutton6 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)


% Hint: get(hObject,'Value') returns toggle state of radiobutton6



% --- Executes on selection change in popupmenu2.
function popupmenu2_Callback(hObject, eventdata, handles)
global vazios incertezaB variaveis list
% hObject    handle to popupmenu2 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)


% Hints: contents = get(hObject,'String') returns popupmenu2 contents
as cell array
%        contents{get(hObject,'Value')} returns selected item from
popupmenu2
valorsel = get(handles.popupmenu2,'Value');
if isempty(vazios)==0
if vazios(1,valorsel)~=0
    set(handles.listbox2,'String',eval(['list.'
cell2mat(variaveis.simbolo(valorsel))]))
    else
    set(handles.listbox2,'String','')
end
end
resultsStr = get(handles.listbox2,'String');
%este comando pega a variável que armazena os nomes do listbox
numResults = size(resultsStr,1);
%este comando cálcula o número de variáveis que temos no listbox
if numResults ~=0
    set([handles.pushbutton7],'Enable','on')
else
    set([handles.pushbutton7],'Enable','off')
end
% hObject    handle to popupmenu2 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)


% Hints: contents = get(hObject,'String') returns popupmenu2 contents
as cell array
%        contents{get(hObject,'Value')} returns selected item from
popupmenu2



% --- Executes during object creation, after setting all properties.
function popupmenu2_CreateFcn(hObject, eventdata, handles)
global variaveis n
% hObject    handle to popupmenu2 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called


% Hint: popupmenu controls usually have a white background on Windows.
%        See ISPC and COMPUTER.
```

```matlab
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end


set(hObject, 'String', variaveis.nome');

function edit4_Callback(hObject, eventdata, handles)
% hObject    handle to edit4 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of edit4 as text
%        str2double(get(hObject,'String')) returns contents of edit4
as a double


% --- Executes during object creation, after setting all properties.
function edit4_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit4 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end




function edit5_Callback(hObject, eventdata, handles)
% hObject    handle to edit5 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of edit5 as text
%        str2double(get(hObject,'String')) returns contents of edit5
as a double



% --- Executes during object creation, after setting all properties.
function edit5_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit5 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end
```

```matlab
% --- Executes on button press in pushbutton8.
function pushbutton8_Callback(hObject, eventdata, handles)

% hObject    handle to pushbutton8 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
run('help_coeficiente_de_sensibilidade')


function edit6_Callback(hObject, eventdata, handles)
% hObject    handle to edit6 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of edit6 as text
%        str2double(get(hObject,'String')) returns contents of edit6
as a double


% --- Executes during object creation, after setting all properties.
function edit6_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit6 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end


% --- Executes on button press in pushbutton9.
function pushbutton9_Callback(hObject, eventdata, handles)
% hObject    handle to pushbutton9 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
run('help_04_grau')


% --- Executes on button press in pushbutton11.
function pushbutton11_Callback(hObject, eventdata, handles)

% hObject    handle to pushbutton11 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

close
run('tela_03_entrada_de_dados')


% --- Executes on button press in pushbutton12.
function pushbutton12_Callback(hObject, eventdata, handles)
```

```matlab
global medicao variaveis metodo incertezaB vazios variavelsaida
if isempty(incertezaB)==1
    for j=1:length(variaveis.nome)
        eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.unidade={''''};']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(j)) '.valor=0;']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.liberdade=1^10;']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.sensibilidade=0;']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(j)) '.nome={''''};']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(j)) '.fdp={1};']);
if medicao==1
    vazios=0;
end
    end
else
    for j=1:length(variaveis.nome)
        if vazios(j)==0
        eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.unidade={''''};']);
        eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.valor=0;']);
        eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.liberdade=1^10;']);
        eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.sensibilidade=0;']);
        eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.nome={''''};']);
        eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.fdp={1};']);
        end
    end
end
close
if medicao==0
run('tela_05_modelo')

else
    modelo=cell2mat(variaveis.simbolo);
    variavelsaida.nome=variaveis.nome;
    variavelsaida.unidade=variaveis.unidade;
    variavelsaida.simbolo=variaveis.simbolo;
    if metodo(1)==1
        run('Programa_ISO')
    end
    if metodo(2)==1
        run('MMC_codigo')
    end

    if metodo(1)==1
        run('tela_06_relatorio')
    end
    if metodo(2)==1
    run('Grafico')
    end
end
% hObject    handle to pushbutton12 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
```

```matlab
function edit7_Callback(hObject, eventdata, handles)
% hObject    handle to edit7 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of edit7 as text
%        str2double(get(hObject,'String')) returns contents of edit7
as a double


% --- Executes during object creation, after setting all properties.
function edit7_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit7 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end




function edit8_Callback(hObject, eventdata, handles)
% hObject    handle to edit8 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of edit8 as text
%        str2double(get(hObject,'String')) returns contents of edit8
as a double


% --- Executes during object creation, after setting all properties.
function edit8_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit8 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end
```

```matlab
function edit9_Callback(hObject, eventdata, handles)
% hObject    handle to edit9 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of edit9 as text
%        str2double(get(hObject,'String')) returns contents of edit9
as a double


% --- Executes during object creation, after setting all properties.
function edit9_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit9 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end


% --- Executes during object creation, after setting all properties.
function pushbutton6_CreateFcn(hObject, eventdata, handles)
% hObject    handle to pushbutton6 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

Tela 05
function varargout = tela_04_incerteza_tipoB(varargin)

% TELA_04_INCERTEZA_TIPOB M-file for tela_04_incerteza_tipoB.fig
%      TELA_04_INCERTEZA_TIPOB, by itself, creates a new
TELA_04_INCERTEZA_TIPOB or raises the existing
%      singleton*.
%
%      H = TELA_04_INCERTEZA_TIPOB returns the handle to a new
TELA_04_INCERTEZA_TIPOB or the handle to
%      the existing singleton*.
%
%
TELA_04_INCERTEZA_TIPOB('CALLBACK',hObject,eventData,handles,...)
calls the local
%      function named CALLBACK in TELA_04_INCERTEZA_TIPOB.M with the
given input arguments.
%
%      TELA_04_INCERTEZA_TIPOB('Property','Value',...) creates a new
TELA_04_INCERTEZA_TIPOB or raises the
%      existing singleton*.  Starting from the left, property value
pairs are
%      applied to the GUI before
tela_04_incerteza_tipoB_OpeningFunction gets called.  An
```

```matlab
%      unrecognized property name or invalid value makes property
application
%      stop.  All inputs are passed to
tela_04_incerteza_tipoB_OpeningFcn via varargin.
%
%      *See GUI Options on GUIDE's Tools menu.  Choose "GUI allows
only one
%      instance to run (singleton)".
%
% See also: GUIDE, GUIDATA, GUIHANDLES

% Edit the above text to modify the response to help
tela_04_incerteza_tipoB

% Last Modified by GUIDE v2.5 23-Sep-2009 11:03:30

% Begin initialization code - DO NOT EDIT
gui_Singleton = 1;
gui_State = struct('gui_Name',       mfilename, ...
                   'gui_Singleton',  gui_Singleton, ...
                   'gui_OpeningFcn',
@tela_04_incerteza_tipoB_OpeningFcn, ...
                   'gui_OutputFcn',
@tela_04_incerteza_tipoB_OutputFcn, ...
                   'gui_LayoutFcn',  [] , ...
                   'gui_Callback',   []);
if nargin && ischar(varargin{1})
    gui_State.gui_Callback = str2func(varargin{1});
end

if nargout
    [varargout{1:nargout}] = gui_mainfcn(gui_State, varargin{:});
else
    gui_mainfcn(gui_State, varargin{:});
end
% End initialization code - DO NOT EDIT


% --- Executes just before tela_04_incerteza_tipoB is made visible.
function tela_04_incerteza_tipoB_OpeningFcn(hObject, eventdata,
handles, varargin)
global list variaveis
% This function has no output args, see OutputFcn.
% hObject    handle to figure
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
% varargin   command line arguments to tela_04_incerteza_tipoB (see
VARARGIN)

% Choose default command line output for tela_04_incerteza_tipoB
handles.output = hObject;

% Update handles structure
guidata(hObject, handles);

% UIWAIT makes tela_04_incerteza_tipoB wait for user response (see
UIRESUME)
% uiwait(handles.figure1);
if isempty(list)~=1
```

```matlab
    eval(['set(handles.listbox2,' '''String''' ',list.'
cell2mat(variaveis.simbolo(1)) ')'])
end


% --- Outputs from this function are returned to the command line.
function varargout = tela_04_incerteza_tipoB_OutputFcn(hObject,
eventdata, handles)
% varargout  cell array for returning output args (see VARARGOUT);
% hObject    handle to figure
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Get default command line output from handles structure
varargout{1} = handles.output;


% --- Executes on button press in pushbutton10.
function pushbutton10_Callback(hObject, eventdata, handles)
% % hObject    handle to pushbutton10 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
run('help_03_qualfdp')

% --- Executes on button press in pushbutton6.
function pushbutton6_Callback(hObject, eventdata, handles)
global nb incertezaB variaveis vazios valorsel list

% GIGA 6/10/9 %%%
%Testes de erro

if
(isempty(get(handles.edit4,'String'))||isempty(get(handles.edit5,'Stri
ng'))...

||isempty(get(handles.edit6,'String'))||isempty(get(handles.edit7,'Str
ing'))...

||isempty(get(handles.edit8,'String'))||isempty(get(handles.edit9,'Str
ing')))
    errordlg('Todas as lacunas devem ser preenchidas para adicionar a
incerteza tipo B!')
    return
end

if (~isempty(find(get(handles.edit4,'String') == 44,
1))||~isempty(find(get(handles.edit5,'String') == 44, 1))...
        ||~isempty(find(get(handles.edit6,'String') == 44, 1)))
    errordlg('Neste programa usa-se ponto  ''.''  para separar as
casas decimais!          Não use vírgulas '','' !')
    return

elseif
~isanumber(get(handles.edit4,'String'))||~isanumber(get(handles.edit5,
'String'))...
    ||~isanumber(get(handles.edit6,'String'))
    errordlg('Valor da incerteza tipo B, Graus de liberdade e
Coeficiente de sensibilidade precisam ser números!')
    return
```

```matlab
        end




%Testes de erro
%GIGA 6/10/9 %%%


n=get(handles.popupmenu2,'Value');
if isempty(incertezaB)
    vazios=zeros(1,length(variaveis.nome));
    vazios(n)=1; %matriz q diz se jah foi colacada incerteza do tipo B
a uma variavel
    nb=0;
elseif vazios(n)==0
    vazios(n)=1;
    nb=0;
else
    eval(['nb=length(incertezaB.' cell2mat(variaveis.simbolo(n))
'.valor);'])
end
nb=nb+1;

eval(['incertezaB.' cell2mat(variaveis.simbolo(n))
'.unidade(nb)={get(handles.edit8,' '''String''' ')};']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(n))
'.valor(nb)=str2num(get(handles.edit4,' '''String''' '));']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(n))
'.liberdade(nb)=str2num(get(handles.edit6,' '''String''' '));']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(n))
'.sensibilidade(nb)=str2num(get(handles.edit5,' '''String''' '));']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(n))
'.nome(nb)={get(handles.edit7,' '''String''' ')};']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(n))
'.unid_sensi(nb)={get(handles.edit9,' '''String''' ')};']);
% eval(['incertezaB.' cell2mat(variaveis.simbolo(nb))
'.fdp(nb)={get(handles.edit4,' 'String' ')};']);
% incertezaB.liberdade(nb)={get(handles.edit6,'String')};
% incertezaB.sensibilidade(nb)={get(handles.edit5,'String')};
eval(['incertezaB.' cell2mat(variaveis.simbolo(n))
'.fdp(nb)={find([get(handles.radiobutton4,' '''Value'''
'),get(handles.radiobutton5,' '''Value''' '),'...
    'get(handles.radiobutton6,' '''Value''' ')])};']); % o valor 1
representa gaussiana, 3 triangular e 3 retangular

% hObject    handle to pushbutton6 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
valorsel = get(handles.popupmenu2,'Value');

t=cellstr([cell2mat(eval(['incertezaB.'
cell2mat(variaveis.simbolo(valorsel)) '.nome(nb)']))...
    '          ' num2str(eval(['incertezaB.'
cell2mat(variaveis.simbolo(valorsel)) '.valor(nb)']))...
    ' ' cell2mat(eval(['incertezaB.'
cell2mat(variaveis.simbolo(valorsel)) '.unidade(nb)']))]);
eval(['list.' cell2mat(variaveis.simbolo(n)) '(nb,:)=t;'])
```

```matlab
eval(['set(handles.listbox2,' '''String''' ',list.'
cell2mat(variaveis.simbolo(n)) ')'])
set(handles.edit7,'string','')
set(handles.edit4,'string','')
set(handles.edit5,'string','')
set(handles.edit6,'string','')
set(handles.edit8,'string','')
set(handles.edit9,'string','')

set([handles.pushbutton7],'Enable','on')

% --- Executes on button press in pushbutton7.
function pushbutton7_Callback(hObject, eventdata, handles)
global nb vazios variaveis incertezaB list
if isempty(nb)==0
    nb=nb-1;
end
valorsel = get(handles.popupmenu2,'Value');
currentVal= get(handles.listbox2,'Value');
%este comando pega o valor que está selecionado no listbox é um número
de 1 ao número de variáveis adcionadas
resultsStr = get(handles.listbox2,'String');
%este comando pega a variável que armazena os nomes do listbox
numResults = size(resultsStr,1);
%este comando cálcula o número de variáveis que temos no listbox
resultsStr(currentVal) =[];
eval(['list.' cell2mat(variaveis.simbolo(valorsel)) '=resultsStr']);
  %transforma em vazio o local do listbox selecionado

%ver qual variavel está selecionada no listbox
eval(['incertezaB.' cell2mat(variaveis.simbolo(valorsel))
'.unidade(currentVal)=[];']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(valorsel))
'.valor(currentVal)=[];']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(valorsel))
'.liberdade(currentVal)=[];']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(valorsel))
'.sensibilidade(currentVal)=[];']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(valorsel))
'.nome(currentVal)=[];']);
% eval(['incertezaB.' cell2mat(variaveis.simbolo(nb))
'.fdp(nb)={get(handles.edit4,' 'String' ')};']);
% incertezaB.liberdade(nb)={get(handles.edit6,'String')};
% incertezaB.sensibilidade(nb)={get(handles.edit5,'String')};
eval(['incertezaB.' cell2mat(variaveis.simbolo(valorsel))
'.fdp(currentVal)=[];']);
if numResults ==0
   vazios(currentVal)=[];
end
 %DESABILITANDO O BOTÃO SE NÃO TEMOS MAIS VARIÁVEIS A SER REMOVIDAS
%MUDA A LISTA DE STRINGS PARA VAZIO
if isequal(numResults,length(currentVal)),%se for igual o número de
variáveis a 1
    resultsStr = {'<empty>'};%esvazia o listbox
    currentVal = 1;% e faz o valor selecionado igual a 1
    eval(['list.' cell2mat(variaveis.simbolo(valorsel))
'=resultsStr']);
    set([handles.pushbutton7],'Enable','off')%desativA o botão de
remover
end
```

```matlab
%--------------------------------------------------------------------
%TRANSFORMA O CURRENTVAL(NÚMERO INTEIRO QUE CORRESPONDE A VALUE)NO
MENOR
%VALOR ENTRE O ANTIGO VALUE E O TAMANHO DO STRING QUE ESTÁ NO LISTBOX
(NÚMERO DE VARIÁVEIS)
currentVal = min(currentVal,size(resultsStr,1));
set(handles.listbox2,'Value',currentVal,'String',resultsStr)


%-------------------------------------------------------
% hObject    handle to pushbutton7 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)


% --- Executes on selection change in listbox2.
% hObject    handle to pushbutton7 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)


% --- Executes on selection change in listbox2.
function listbox2_Callback(hObject, eventdata, handles)
% hObject    handle to listbox2 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: contents = get(hObject,'String') returns listbox2 contents as
cell array
%        contents{get(hObject,'Value')} returns selected item from
listbox2


% --- Executes during object creation, after setting all properties.
function listbox2_CreateFcn(hObject, eventdata, handles)
% hObject    handle to listbox2 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: listbox controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end


% --- Executes on button press in radiobutton4.
function radiobutton4_Callback(hObject, eventdata, handles)
set(handles.radiobutton5, 'Value', 0)
set(handles.radiobutton6, 'Value', 0)
set(handles.radiobutton4, 'Value', 1)
set(handles.text6,'String','Valor da incerteza do tipo B')
% hObject    handle to radiobutton4 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hint: get(hObject,'Value') returns toggle state of radiobutton4
```

```matlab
% --- Executes on button press in radiobutton5.
function radiobutton5_Callback(hObject, eventdata, handles)
set(handles.radiobutton4, 'Value', 0)
set(handles.radiobutton6, 'Value', 0)
set(handles.radiobutton5, 'Value', 1)
set(handles.text6,'String','Amplitude (Max-Min)')
% hObject    handle to radiobutton5 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hint: get(hObject,'Value') returns toggle state of radiobutton5


% --- Executes on button press in radiobutton6.
function radiobutton6_Callback(hObject, eventdata, handles)
set(handles.radiobutton4, 'Value', 0)
set(handles.radiobutton5, 'Value', 0)
set(handles.radiobutton6, 'Value', 1)
set(handles.text6,'String','Amplitude (Max-Min)')
% hObject    handle to radiobutton6 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hint: get(hObject,'Value') returns toggle state of radiobutton6


% --- Executes on selection change in popupmenu2.
function popupmenu2_Callback(hObject, eventdata, handles)
global vazios incertezaB variaveis list
% hObject    handle to popupmenu2 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: contents = get(hObject,'String') returns popupmenu2 contents
as cell array
%        contents{get(hObject,'Value')} returns selected item from
popupmenu2
valorsel = get(handles.popupmenu2,'Value');
if isempty(vazios)==0
if vazios(1,valorsel)~=0
    set(handles.listbox2,'String',eval(['list.'
cell2mat(variaveis.simbolo(valorsel))]))
    else
    set(handles.listbox2,'String','')
end
end
resultsStr = get(handles.listbox2,'String');
%este comando pega a variável que armazena os nomes do listbox
numResults = size(resultsStr,1);
%este comando cálcula o número de variáveis que temos no listbox
if numResults ~=0
    set([handles.pushbutton7],'Enable','on')
else
    set([handles.pushbutton7],'Enable','off')
end
% hObject    handle to popupmenu2 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
```

```matlab
% Hints: contents = get(hObject,'String') returns popupmenu2 contents
as cell array
%        contents{get(hObject,'Value')} returns selected item from
popupmenu2


% --- Executes during object creation, after setting all properties.
function popupmenu2_CreateFcn(hObject, eventdata, handles)
global variaveis n
% hObject    handle to popupmenu2 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: popupmenu controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end


set(hObject, 'String', variaveis.nome');

function edit4_Callback(hObject, eventdata, handles)
% hObject    handle to edit4 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of edit4 as text
%        str2double(get(hObject,'String')) returns contents of edit4
as a double


% --- Executes during object creation, after setting all properties.
function edit4_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit4 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end



function edit5_Callback(hObject, eventdata, handles)
% hObject    handle to edit5 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of edit5 as text
```

```matlab
%        str2double(get(hObject,'String')) returns contents of edit5
as a double


% --- Executes during object creation, after setting all properties.
function edit5_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit5 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%        See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end


% --- Executes on button press in pushbutton8.
function pushbutton8_Callback(hObject, eventdata, handles)

% hObject    handle to pushbutton8 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
run('help_coeficiente_de_sensibilidade')


function edit6_Callback(hObject, eventdata, handles)
% hObject    handle to edit6 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of edit6 as text
%        str2double(get(hObject,'String')) returns contents of edit6
as a double


% --- Executes during object creation, after setting all properties.
function edit6_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit6 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%        See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end


% --- Executes on button press in pushbutton9.
function pushbutton9_Callback(hObject, eventdata, handles)
% hObject    handle to pushbutton9 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
run('help_04_grau')
```

```matlab
% --- Executes on button press in pushbutton11.
function pushbutton11_Callback(hObject, eventdata, handles)

% hObject    handle to pushbutton11 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

close
run('tela_03_entrada_de_dados')




% --- Executes on button press in pushbutton12.
function pushbutton12_Callback(hObject, eventdata, handles)
global medicao variaveis metodo incertezaB vazios variavelsaida
if isempty(incertezaB)==1
    for j=1:length(variaveis.nome)
        eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.unidade={''''};']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(j)) '.valor=0;']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.liberdade=1^10;']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.sensibilidade=0;']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(j)) '.nome={''''};']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(j)) '.fdp={1};']);
if medicao==1
    vazios=0;
end
    end
else
    for j=1:length(variaveis.nome)
        if vazios(j)==0
        eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.unidade={''''};']);
        eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.valor=0;']);
        eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.liberdade=1^10;']);
        eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.sensibilidade=0;']);
        eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.nome={''''};']);
        eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.fdp={1};']);
        end
    end
end
close
if medicao==0
run('tela_05_modelo')

else
    modelo=cell2mat(variaveis.simbolo);
    variavelsaida.nome=variaveis.nome;
    variavelsaida.unidade=variaveis.unidade;
    variavelsaida.simbolo=variaveis.simbolo;
```

```matlab
    if metodo(1)==1
        run('Programa_ISO')
    end
    if metodo(2)==1
        run('MMC_codigo')
    end

    if metodo(1)==1
        run('tela_06_relatorio')
    end
    if metodo(2)==1
    run('Grafico')
    end
end
% hObject    handle to pushbutton12 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)




function edit7_Callback(hObject, eventdata, handles)
% hObject    handle to edit7 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of edit7 as text
%        str2double(get(hObject,'String')) returns contents of edit7
as a double



% --- Executes during object creation, after setting all properties.
function edit7_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit7 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end




function edit8_Callback(hObject, eventdata, handles)
% hObject    handle to edit8 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of edit8 as text
%        str2double(get(hObject,'String')) returns contents of edit8
as a double
```

```matlab
% --- Executes during object creation, after setting all properties.
function edit8_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit8 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end




function edit9_Callback(hObject, eventdata, handles)
% hObject    handle to edit9 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of edit9 as text
%        str2double(get(hObject,'String')) returns contents of edit9
as a double


% --- Executes during object creation, after setting all properties.
function edit9_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit9 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end



% --- Executes during object creation, after setting all properties.
function pushbutton6_CreateFcn(hObject, eventdata, handles)
% hObject    handle to pushbutton6 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called



function varargout = tela_04_incerteza_tipoB(varargin)

% TELA_04_INCERTEZA_TIPOB M-file for tela_04_incerteza_tipoB.fig
%      TELA_04_INCERTEZA_TIPOB, by itself, creates a new
TELA_04_INCERTEZA_TIPOB or raises the existing
```

```matlab
%      singleton*.
%
%      H = TELA_04_INCERTEZA_TIPOB returns the handle to a new
TELA_04_INCERTEZA_TIPOB or the handle to
%      the existing singleton*.
%
%
TELA_04_INCERTEZA_TIPOB('CALLBACK',hObject,eventData,handles,...)
calls the local
%      function named CALLBACK in TELA_04_INCERTEZA_TIPOB.M with the
given input arguments.
%
%      TELA_04_INCERTEZA_TIPOB('Property','Value',...) creates a new
TELA_04_INCERTEZA_TIPOB or raises the
%      existing singleton*.  Starting from the left, property value
pairs are
%      applied to the GUI before
tela_04_incerteza_tipoB_OpeningFunction gets called.  An
%      unrecognized property name or invalid value makes property
application
%      stop.  All inputs are passed to
tela_04_incerteza_tipoB_OpeningFcn via varargin.
%
%      *See GUI Options on GUIDE's Tools menu.  Choose "GUI allows
only one
%      instance to run (singleton)".
%
% See also: GUIDE, GUIDATA, GUIHANDLES

% Edit the above text to modify the response to help
tela_04_incerteza_tipoB

% Last Modified by GUIDE v2.5 23-Sep-2009 11:03:30

% Begin initialization code - DO NOT EDIT
gui_Singleton = 1;
gui_State = struct('gui_Name',        mfilename, ...
                   'gui_Singleton',  gui_Singleton, ...
                   'gui_OpeningFcn',
@tela_04_incerteza_tipoB_OpeningFcn, ...
                   'gui_OutputFcn',
@tela_04_incerteza_tipoB_OutputFcn, ...
                   'gui_LayoutFcn',  [] , ...
                   'gui_Callback',   []);
if nargin && ischar(varargin{1})
    gui_State.gui_Callback = str2func(varargin{1});
end

if nargout
    [varargout{1:nargout}] = gui_mainfcn(gui_State, varargin{:});
else
    gui_mainfcn(gui_State, varargin{:});
end
% End initialization code - DO NOT EDIT


% --- Executes just before tela_04_incerteza_tipoB is made visible.
function tela_04_incerteza_tipoB_OpeningFcn(hObject, eventdata,
handles, varargin)
global list variaveis
```

```matlab
% This function has no output args, see OutputFcn.
% hObject    handle to figure
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
% varargin   command line arguments to tela_04_incerteza_tipoB (see
VARARGIN)

% Choose default command line output for tela_04_incerteza_tipoB
handles.output = hObject;

% Update handles structure
guidata(hObject, handles);

% UIWAIT makes tela_04_incerteza_tipoB wait for user response (see
UIRESUME)
% uiwait(handles.figure1);
if isempty(list)~=1
    eval(['set(handles.listbox2,' '''String''' ',list.'
cell2mat(variaveis.simbolo(1)) ')'])
end


% --- Outputs from this function are returned to the command line.
function varargout = tela_04_incerteza_tipoB_OutputFcn(hObject,
eventdata, handles)
% varargout  cell array for returning output args (see VARARGOUT);
% hObject    handle to figure
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Get default command line output from handles structure
varargout{1} = handles.output;


% --- Executes on button press in pushbutton10.
function pushbutton10_Callback(hObject, eventdata, handles)
% % hObject    handle to pushbutton10 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
run('help_03_qualfdp')

% --- Executes on button press in pushbutton6.
function pushbutton6_Callback(hObject, eventdata, handles)
global nb incertezaB variaveis vazios valorsel list

% GIGA 6/10/9 %%%
%Testes de erro

if
(isempty(get(handles.edit4,'String'))||isempty(get(handles.edit5,'Stri
ng'))...

||isempty(get(handles.edit6,'String'))||isempty(get(handles.edit7,'Str
ing'))...

||isempty(get(handles.edit8,'String'))||isempty(get(handles.edit9,'Str
ing')))
    errordlg('Todas as lacunas devem ser preenchidas para adicionar a
incerteza tipo B!')
```

```matlab
        return
end

if (~isempty(find(get(handles.edit4,'String') == 44,
1))||~isempty(find(get(handles.edit5,'String') == 44, 1))...
        ||~isempty(find(get(handles.edit6,'String') == 44, 1)))
    errordlg('Neste programa usa-se ponto  ''.''  para separar as
casas decimais!          Não use vírgulas '','' !')
    return

elseif
~isanumber(get(handles.edit4,'String'))||~isanumber(get(handles.edit5,
'String'))...
    ||~isanumber(get(handles.edit6,'String'))
    errordlg('Valor da incerteza tipo B, Graus de liberdade e
Coeficiente de sensibilidade precisam ser números!')
    return
end




%Testes de erro
%GIGA 6/10/9 %%%


n=get(handles.popupmenu2,'Value');
if isempty(incertezaB)
    vazios=zeros(1,length(variaveis.nome));
    vazios(n)=1; %matriz q diz se jah foi colacada incerteza do tipo B
a uma variavel
    nb=0;
elseif vazios(n)==0
    vazios(n)=1;
    nb=0;
else
    eval(['nb=length(incertezaB.' cell2mat(variaveis.simbolo(n))
'.valor);'])
end
nb=nb+1;

eval(['incertezaB.' cell2mat(variaveis.simbolo(n))
'.unidade(nb)={get(handles.edit8,' '''String''' ')};']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(n))
'.valor(nb)=str2num(get(handles.edit4,' '''String''' '));']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(n))
'.liberdade(nb)=str2num(get(handles.edit6,' '''String''' '));']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(n))
'.sensibilidade(nb)=str2num(get(handles.edit5,' '''String''' '));']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(n))
'.nome(nb)={get(handles.edit7,' '''String''' ')};']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(n))
'.unid_sensi(nb)={get(handles.edit9,' '''String''' ')};']);
% eval(['incertezaB.' cell2mat(variaveis.simbolo(nb))
'.fdp(nb)={get(handles.edit4,' 'String' ')};']);
% incertezaB.liberdade(nb)={get(handles.edit6,'String')};
% incertezaB.sensibilidade(nb)={get(handles.edit5,'String')};
```

```matlab
eval(['incertezaB.' cell2mat(variaveis.simbolo(n))
'.fdp(nb)={find([get(handles.radiobutton4,' '''Value'''
'),get(handles.radiobutton5,' '''Value''' '),'...
    'get(handles.radiobutton6,' '''Value''' ')])};']); % o valor 1
representa gaussiana, 3 triangular e 3 retangular

% hObject    handle to pushbutton6 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
valorsel = get(handles.popupmenu2,'Value');

t=cellstr([cell2mat(eval(['incertezaB.'
cell2mat(variaveis.simbolo(valorsel)) '.nome(nb)']))...
    '         ' num2str(eval(['incertezaB.'
cell2mat(variaveis.simbolo(valorsel)) '.valor(nb)']))...
    ' ' cell2mat(eval(['incertezaB.'
cell2mat(variaveis.simbolo(valorsel)) '.unidade(nb)']))]);
eval(['list.' cell2mat(variaveis.simbolo(n)) '(nb,:)=t;'])
eval(['set(handles.listbox2,' '''String''' ',list.'
cell2mat(variaveis.simbolo(n)) ')'])
set(handles.edit7,'string','')
set(handles.edit4,'string','')
set(handles.edit5,'string','')
set(handles.edit6,'string','')
set(handles.edit8,'string','')
set(handles.edit9,'string','')

set([handles.pushbutton7],'Enable','on')

% --- Executes on button press in pushbutton7.
function pushbutton7_Callback(hObject, eventdata, handles)
global nb vazios variaveis incertezaB list
if isempty(nb)==0
    nb=nb-1;
end
valorsel = get(handles.popupmenu2,'Value');
currentVal= get(handles.listbox2,'Value');
%este comando pega o valor que está selecionado no listbox é um número
de 1 ao número de variáveis adcionadas
resultsStr = get(handles.listbox2,'String');
%este comando pega a variável que armazena os nomes do listbox
numResults = size(resultsStr,1);
%este comando cálcula o número de variáveis que temos no listbox
resultsStr(currentVal) =[];
eval(['list.' cell2mat(variaveis.simbolo(valorsel)) '=resultsStr']);
  %transforma em vazio o local do listbox selecionado

%ver qual variavel está selecionada no listbox
eval(['incertezaB.' cell2mat(variaveis.simbolo(valorsel))
'.unidade(currentVal)=[];']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(valorsel))
'.valor(currentVal)=[];']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(valorsel))
'.liberdade(currentVal)=[];']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(valorsel))
'.sensibilidade(currentVal)=[];']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(valorsel))
'.nome(currentVal)=[];']);
% eval(['incertezaB.' cell2mat(variaveis.simbolo(nb))
'.fdp(nb)={get(handles.edit4,' 'String' ')};']);
```

```matlab
% incertezaB.liberdade(nb)={get(handles.edit6,'String')};
% incertezaB.sensibilidade(nb)={get(handles.edit5,'String')};
eval(['incertezaB.' cell2mat(variaveis.simbolo(valorsel))
'.fdp(currentVal)=[];']);
if numResults ==0
    vazios(currentVal)=[];
end
 %DESABILITANDO O BOTÃO SE NÃO TEMOS MAIS VARIÁVEIS A SER REMOVIDAS
%MUDA A LISTA DE STRINGS PARA VAZIO
if isequal(numResults,length(currentVal)),%se for igual o número de
variáveis a 1
    resultsStr = {'<empty>'};%esvazia o listbox
    currentVal = 1;% e faz o valor selecionado igual a 1
    eval(['list.' cell2mat(variaveis.simbolo(valorsel))
'=resultsStr']);
    set([handles.pushbutton7],'Enable','off')%desativA o botão de
remover
end
 %-------------------------------------------------------------------
----
%TRANSFORMA O CURRENTVAL(NÚMERO INTEIRO QUE CORRESPONDE A VALUE)NO
MENOR
%VALOR ENTRE O ANTIGO VALUE E O TAMANHO DO STRING QUE ESTÁ NO LISTBOX
(NÚMERO DE VARIÁVEIS)
currentVal = min(currentVal,size(resultsStr,1));
set(handles.listbox2,'Value',currentVal,'String',resultsStr)


%------------------------------------------------------
% hObject    handle to pushbutton7 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)



% --- Executes on selection change in listbox2.
% hObject    handle to pushbutton7 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)



% --- Executes on selection change in listbox2.
function listbox2_Callback(hObject, eventdata, handles)
% hObject    handle to listbox2 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: contents = get(hObject,'String') returns listbox2 contents as
cell array
%        contents{get(hObject,'Value')} returns selected item from
listbox2


% --- Executes during object creation, after setting all properties.
function listbox2_CreateFcn(hObject, eventdata, handles)
% hObject    handle to listbox2 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: listbox controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
```

```matlab
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end


% --- Executes on button press in radiobutton4.
function radiobutton4_Callback(hObject, eventdata, handles)
set(handles.radiobutton5, 'Value', 0)
set(handles.radiobutton6, 'Value', 0)
set(handles.radiobutton4, 'Value', 1)
set(handles.text6,'String','Valor da incerteza do tipo B')
% hObject    handle to radiobutton4 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hint: get(hObject,'Value') returns toggle state of radiobutton4


% --- Executes on button press in radiobutton5.
function radiobutton5_Callback(hObject, eventdata, handles)
set(handles.radiobutton4, 'Value', 0)
set(handles.radiobutton6, 'Value', 0)
set(handles.radiobutton5, 'Value', 1)
set(handles.text6,'String','Amplitude (Max-Min)')
% hObject    handle to radiobutton5 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hint: get(hObject,'Value') returns toggle state of radiobutton5


% --- Executes on button press in radiobutton6.
function radiobutton6_Callback(hObject, eventdata, handles)
set(handles.radiobutton4, 'Value', 0)
set(handles.radiobutton5, 'Value', 0)
set(handles.radiobutton6, 'Value', 1)
set(handles.text6,'String','Amplitude (Max-Min)')
% hObject    handle to radiobutton6 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hint: get(hObject,'Value') returns toggle state of radiobutton6


% --- Executes on selection change in popupmenu2.
function popupmenu2_Callback(hObject, eventdata, handles)
global vazios incertezaB variaveis list
% hObject    handle to popupmenu2 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: contents = get(hObject,'String') returns popupmenu2 contents
as cell array
%        contents{get(hObject,'Value')} returns selected item from
popupmenu2
valorsel = get(handles.popupmenu2,'Value');
if isempty(vazios)==0
if vazios(1,valorsel)~=0
```

```matlab
    set(handles.listbox2,'String',eval(['list.'
cell2mat(variaveis.simbolo(valorsel))]))
    else
    set(handles.listbox2,'String','')
end
end
resultsStr = get(handles.listbox2,'String');
%este comando pega a variável que armazena os nomes do listbox
numResults = size(resultsStr,1);
%este comando cálcula o número de variáveis que temos no listbox
if numResults ~=0
    set([handles.pushbutton7],'Enable','on')
else
    set([handles.pushbutton7],'Enable','off')
end
% hObject    handle to popupmenu2 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: contents = get(hObject,'String') returns popupmenu2 contents
as cell array
%        contents{get(hObject,'Value')} returns selected item from
popupmenu2


% --- Executes during object creation, after setting all properties.
function popupmenu2_CreateFcn(hObject, eventdata, handles)
global variaveis n
% hObject    handle to popupmenu2 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: popupmenu controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end


set(hObject, 'String', variaveis.nome');

function edit4_Callback(hObject, eventdata, handles)
% hObject    handle to edit4 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of edit4 as text
%        str2double(get(hObject,'String')) returns contents of edit4
as a double


% --- Executes during object creation, after setting all properties.
function edit4_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit4 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called
```

```matlab
% Hint: edit controls usually have a white background on Windows.
%        See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'), 
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end




function edit5_Callback(hObject, eventdata, handles)
% hObject     handle to edit5 (see GCBO)
% eventdata   reserved - to be defined in a future version of MATLAB
% handles     structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of edit5 as text
%        str2double(get(hObject,'String')) returns contents of edit5 
as a double


% --- Executes during object creation, after setting all properties.
function edit5_CreateFcn(hObject, eventdata, handles)
% hObject     handle to edit5 (see GCBO)
% eventdata   reserved - to be defined in a future version of MATLAB
% handles     empty - handles not created until after all CreateFcns 
called

% Hint: edit controls usually have a white background on Windows.
%        See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'), 
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end


% --- Executes on button press in pushbutton8.
function pushbutton8_Callback(hObject, eventdata, handles)

% hObject     handle to pushbutton8 (see GCBO)
% eventdata   reserved - to be defined in a future version of MATLAB
% handles     structure with handles and user data (see GUIDATA)
run('help_coeficiente_de_sensibilidade')



function edit6_Callback(hObject, eventdata, handles)
% hObject     handle to edit6 (see GCBO)
% eventdata   reserved - to be defined in a future version of MATLAB
% handles     structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of edit6 as text
%        str2double(get(hObject,'String')) returns contents of edit6 
as a double


% --- Executes during object creation, after setting all properties.
function edit6_CreateFcn(hObject, eventdata, handles)
% hObject     handle to edit6 (see GCBO)
% eventdata   reserved - to be defined in a future version of MATLAB
```

```matlab
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end



% --- Executes on button press in pushbutton9.
function pushbutton9_Callback(hObject, eventdata, handles)
% hObject    handle to pushbutton9 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
run('help_04_grau')




% --- Executes on button press in pushbutton11.
function pushbutton11_Callback(hObject, eventdata, handles)

% hObject    handle to pushbutton11 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

close
run('tela_03_entrada_de_dados')




% --- Executes on button press in pushbutton12.
function pushbutton12_Callback(hObject, eventdata, handles)
global medicao variaveis metodo incertezaB vazios variavelsaida
if isempty(incertezaB)==1
    for j=1:length(variaveis.nome)
        eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.unidade={''''};']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(j)) '.valor=0;']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.liberdade=1^10;']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.sensibilidade=0;']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(j)) '.nome={''''};']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(j)) '.fdp={1};']);
if medicao==1
    vazios=0;
end
    end
else
    for j=1:length(variaveis.nome)
        if vazios(j)==0
        eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.unidade={''''};']);
        eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.valor=0;']);
        eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.liberdade=1^10;']);
```

```matlab
            eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.sensibilidade=0;']);
            eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.nome={''''};']);
            eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.fdp={1};']);
        end
    end
end
close
if medicao==0
run('tela_05_modelo')

else
    modelo=cell2mat(variaveis.simbolo);
    variavelsaida.nome=variaveis.nome;
    variavelsaida.unidade=variaveis.unidade;
    variavelsaida.simbolo=variaveis.simbolo;
    if metodo(1)==1
        run('Programa_ISO')
    end
    if metodo(2)==1
        run('MMC_codigo')
    end

    if metodo(1)==1
        run('tela_06_relatorio')
    end
    if metodo(2)==1
    run('Grafico')
    end
end
% hObject    handle to pushbutton12 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)




function edit7_Callback(hObject, eventdata, handles)
% hObject    handle to edit7 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of edit7 as text
%        str2double(get(hObject,'String')) returns contents of edit7
as a double


% --- Executes during object creation, after setting all properties.
function edit7_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit7 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
```

```matlab
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end




function edit8_Callback(hObject, eventdata, handles)
% hObject    handle to edit8 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of edit8 as text
%        str2double(get(hObject,'String')) returns contents of edit8
as a double


% --- Executes during object creation, after setting all properties.
function edit8_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit8 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end




function edit9_Callback(hObject, eventdata, handles)
% hObject    handle to edit9 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of edit9 as text
%        str2double(get(hObject,'String')) returns contents of edit9
as a double


% --- Executes during object creation, after setting all properties.
function edit9_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit9 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
```

```matlab
        set(hObject,'BackgroundColor','white');
    end


% --- Executes during object creation, after setting all properties.
function pushbutton6_CreateFcn(hObject, eventdata, handles)
% hObject    handle to pushbutton6 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called


function varargout = tela_04_incerteza_tipoB(varargin)

% TELA_04_INCERTEZA_TIPOB M-file for tela_04_incerteza_tipoB.fig
%      TELA_04_INCERTEZA_TIPOB, by itself, creates a new
TELA_04_INCERTEZA_TIPOB or raises the existing
%      singleton*.
%
%      H = TELA_04_INCERTEZA_TIPOB returns the handle to a new
TELA_04_INCERTEZA_TIPOB or the handle to
%      the existing singleton*.
%
%
TELA_04_INCERTEZA_TIPOB('CALLBACK',hObject,eventData,handles,...)
calls the local
%      function named CALLBACK in TELA_04_INCERTEZA_TIPOB.M with the
given input arguments.
%
%      TELA_04_INCERTEZA_TIPOB('Property','Value',...) creates a new
TELA_04_INCERTEZA_TIPOB or raises the
%      existing singleton*.  Starting from the left, property value
pairs are
%      applied to the GUI before
tela_04_incerteza_tipoB_OpeningFunction gets called.  An
%      unrecognized property name or invalid value makes property
application
%      stop.  All inputs are passed to
tela_04_incerteza_tipoB_OpeningFcn via varargin.
%
%      *See GUI Options on GUIDE's Tools menu.  Choose "GUI allows
only one
%      instance to run (singleton)".
%
% See also: GUIDE, GUIDATA, GUIHANDLES

% Edit the above text to modify the response to help
tela_04_incerteza_tipoB

% Last Modified by GUIDE v2.5 23-Sep-2009 11:03:30

% Begin initialization code - DO NOT EDIT
gui_Singleton = 1;
gui_State = struct('gui_Name',       mfilename, ...
                   'gui_Singleton',  gui_Singleton, ...
                   'gui_OpeningFcn',
@tela_04_incerteza_tipoB_OpeningFcn, ...
                   'gui_OutputFcn',
@tela_04_incerteza_tipoB_OutputFcn, ...
                   'gui_LayoutFcn',  [] , ...
```

```matlab
                        'gui_Callback',    []);
if nargin && ischar(varargin{1})
    gui_State.gui_Callback = str2func(varargin{1});
end

if nargout
    [varargout{1:nargout}] = gui_mainfcn(gui_State, varargin{:});
else
    gui_mainfcn(gui_State, varargin{:});
end
% End initialization code - DO NOT EDIT


% --- Executes just before tela_04_incerteza_tipoB is made visible.
function tela_04_incerteza_tipoB_OpeningFcn(hObject, eventdata,
handles, varargin)
global list variaveis
% This function has no output args, see OutputFcn.
% hObject    handle to figure
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
% varargin   command line arguments to tela_04_incerteza_tipoB (see
VARARGIN)

% Choose default command line output for tela_04_incerteza_tipoB
handles.output = hObject;

% Update handles structure
guidata(hObject, handles);

% UIWAIT makes tela_04_incerteza_tipoB wait for user response (see
UIRESUME)
% uiwait(handles.figure1);
if isempty(list)~=1
    eval(['set(handles.listbox2,' '''String''' ',list.'
cell2mat(variaveis.simbolo(1)) ')'])
end


% --- Outputs from this function are returned to the command line.
function varargout = tela_04_incerteza_tipoB_OutputFcn(hObject,
eventdata, handles)
% varargout  cell array for returning output args (see VARARGOUT);
% hObject    handle to figure
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Get default command line output from handles structure
varargout{1} = handles.output;


% --- Executes on button press in pushbutton10.
function pushbutton10_Callback(hObject, eventdata, handles)
% % hObject    handle to pushbutton10 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
run('help_03_qualfdp')

% --- Executes on button press in pushbutton6.
```

```matlab
function pushbutton6_Callback(hObject, eventdata, handles)
global nb incertezaB variaveis vazios valorsel list

% GIGA 6/10/9 %%%
%Testes de erro

if
(isempty(get(handles.edit4,'String'))||isempty(get(handles.edit5,'Stri
ng'))...

||isempty(get(handles.edit6,'String'))||isempty(get(handles.edit7,'Str
ing'))...

||isempty(get(handles.edit8,'String'))||isempty(get(handles.edit9,'Str
ing')))
    errordlg('Todas as lacunas devem ser preenchidas para adicionar a
incerteza tipo B!')
    return
end

if (~isempty(find(get(handles.edit4,'String') == 44,
1))||~isempty(find(get(handles.edit5,'String') == 44, 1))...
        ||~isempty(find(get(handles.edit6,'String') == 44, 1)))
     errordlg('Neste programa usa-se ponto  ''.''  para separar as
casas decimais!          Não use vírgulas '','' !')
     return

elseif
~isanumber(get(handles.edit4,'String'))||~isanumber(get(handles.edit5,
'String'))...
    ||~isanumber(get(handles.edit6,'String'))
    errordlg('Valor da incerteza tipo B, Graus de liberdade e
Coeficiente de sensibilidade precisam ser números!')
    return
end




%Testes de erro
%GIGA 6/10/9 %%%


n=get(handles.popupmenu2,'Value');
if isempty(incertezaB)
    vazios=zeros(1,length(variaveis.nome));
    vazios(n)=1; %matriz q diz se jah foi colacada incerteza do tipo B
a uma variavel
   nb=0;
elseif vazios(n)==0
   vazios(n)=1;
   nb=0;
else
   eval(['nb=length(incertezaB.' cell2mat(variaveis.simbolo(n))
'.valor);'])
end
nb=nb+1;
```

```matlab
eval(['incertezaB.' cell2mat(variaveis.simbolo(n))
'.unidade(nb)={get(handles.edit8,' '''String''' ')};']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(n))
'.valor(nb)=str2num(get(handles.edit4,' '''String''' '));']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(n))
'.liberdade(nb)=str2num(get(handles.edit6,' '''String''' '));']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(n))
'.sensibilidade(nb)=str2num(get(handles.edit5,' '''String''' '));']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(n))
'.nome(nb)={get(handles.edit7,' '''String''' ')};']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(n))
'.unid_sensi(nb)={get(handles.edit9,' '''String''' ')};']);
% eval(['incertezaB.' cell2mat(variaveis.simbolo(nb))
'.fdp(nb)={get(handles.edit4,' 'String' ')};']);
% incertezaB.liberdade(nb)={get(handles.edit6,'String')};
% incertezaB.sensibilidade(nb)={get(handles.edit5,'String')};
eval(['incertezaB.' cell2mat(variaveis.simbolo(n))
'.fdp(nb)={find([get(handles.radiobutton4,' '''Value'''
'),get(handles.radiobutton5,' '''Value''' '),'...
    'get(handles.radiobutton6,' '''Value''' ')])};']); % o valor 1
representa gaussiana, 3 triangular e 3 retangular

% hObject    handle to pushbutton6 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
valorsel = get(handles.popupmenu2,'Value');

t=cellstr([cell2mat(eval(['incertezaB.'
cell2mat(variaveis.simbolo(valorsel)) '.nome(nb)']))...
    '        ' num2str(eval(['incertezaB.'
cell2mat(variaveis.simbolo(valorsel)) '.valor(nb)']))...
    ' ' cell2mat(eval(['incertezaB.'
cell2mat(variaveis.simbolo(valorsel)) '.unidade(nb)']))]);
eval(['list.' cell2mat(variaveis.simbolo(n)) '(nb,:)=t;'])
eval(['set(handles.listbox2,' '''String''' ',list.'
cell2mat(variaveis.simbolo(n)) ')'])
set(handles.edit7,'string','')
set(handles.edit4,'string','')
set(handles.edit5,'string','')
set(handles.edit6,'string','')
set(handles.edit8,'string','')
set(handles.edit9,'string','')

set([handles.pushbutton7],'Enable','on')

% --- Executes on button press in pushbutton7.
function pushbutton7_Callback(hObject, eventdata, handles)
global nb vazios variaveis incertezaB list
if isempty(nb)==0
    nb=nb-1;
end
valorsel = get(handles.popupmenu2,'Value');
currentVal= get(handles.listbox2,'Value');
%este comando pega o valor que está selecionado no listbox é um número
de 1 ao número de variáveis adcionadas
resultsStr = get(handles.listbox2,'String');
%este comando pega a variável que armazena os nomes do listbox
numResults = size(resultsStr,1);
%este comando cálcula o número de variáveis que temos no listbox
resultsStr(currentVal) =[];
eval(['list.' cell2mat(variaveis.simbolo(valorsel)) '=resultsStr']);
```

```matlab
    %transforma em vazio o local do listbox selecionado

%ver qual variavel está selecionada no listbox
eval(['incertezaB.' cell2mat(variaveis.simbolo(valorsel))
'.unidade(currentVal)=[];']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(valorsel))
'.valor(currentVal)=[];']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(valorsel))
'.liberdade(currentVal)=[];']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(valorsel))
'.sensibilidade(currentVal)=[];']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(valorsel))
'.nome(currentVal)=[];']);
% eval(['incertezaB.' cell2mat(variaveis.simbolo(nb))
'.fdp(nb)={get(handles.edit4,' 'String' ')};']);
% incertezaB.liberdade(nb)={get(handles.edit6,'String')};
% incertezaB.sensibilidade(nb)={get(handles.edit5,'String')};
eval(['incertezaB.' cell2mat(variaveis.simbolo(valorsel))
'.fdp(currentVal)=[];']);
if numResults ==0
    vazios(currentVal)=[];
end
 %DESABILITANDO O BOTÃO SE NÃO TEMOS MAIS VARIÁVEIS A SER REMOVIDAS
%MUDA A LISTA DE STRINGS PARA VAZIO
if isequal(numResults,length(currentVal)),%se for igual o número de
variáveis a 1
    resultsStr = {'<empty>'};%esvazia o listbox
    currentVal = 1;% e faz o valor selecionado igual a 1
    eval(['list.' cell2mat(variaveis.simbolo(valorsel))
'=resultsStr']);
    set([handles.pushbutton7],'Enable','off')%desativA o botão de
remover
end
 %----------------------------------------------------------------
----
%TRANSFORMA O CURRENTVAL(NÚMERO INTEIRO QUE CORRESPONDE A VALUE)NO
MENOR
%VALOR ENTRE O ANTIGO VALUE E O TAMANHO DO STRING QUE ESTÁ NO LISTBOX
(NÚMERO DE VARIÁVEIS)
currentVal = min(currentVal,size(resultsStr,1));
set(handles.listbox2,'Value',currentVal,'String',resultsStr)

%----------------------------------------------------
% hObject    handle to pushbutton7 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)



% --- Executes on selection change in listbox2.
% hObject    handle to pushbutton7 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)



% --- Executes on selection change in listbox2.
function listbox2_Callback(hObject, eventdata, handles)
% hObject    handle to listbox2 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
```

```matlab
% Hints: contents = get(hObject,'String') returns listbox2 contents as
cell array
%        contents{get(hObject,'Value')} returns selected item from
listbox2


% --- Executes during object creation, after setting all properties.
function listbox2_CreateFcn(hObject, eventdata, handles)
% hObject    handle to listbox2 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: listbox controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end


% --- Executes on button press in radiobutton4.
function radiobutton4_Callback(hObject, eventdata, handles)
set(handles.radiobutton5, 'Value', 0)
set(handles.radiobutton6, 'Value', 0)
set(handles.radiobutton4, 'Value', 1)
set(handles.text6,'String','Valor da incerteza do tipo B')
% hObject    handle to radiobutton4 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hint: get(hObject,'Value') returns toggle state of radiobutton4


% --- Executes on button press in radiobutton5.
function radiobutton5_Callback(hObject, eventdata, handles)
set(handles.radiobutton4, 'Value', 0)
set(handles.radiobutton6, 'Value', 0)
set(handles.radiobutton5, 'Value', 1)
set(handles.text6,'String','Amplitude (Max-Min)')
% hObject    handle to radiobutton5 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hint: get(hObject,'Value') returns toggle state of radiobutton5


% --- Executes on button press in radiobutton6.
function radiobutton6_Callback(hObject, eventdata, handles)
set(handles.radiobutton4, 'Value', 0)
set(handles.radiobutton5, 'Value', 0)
set(handles.radiobutton6, 'Value', 1)
set(handles.text6,'String','Amplitude (Max-Min)')
% hObject    handle to radiobutton6 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hint: get(hObject,'Value') returns toggle state of radiobutton6
```

```matlab
% --- Executes on selection change in popupmenu2.
function popupmenu2_Callback(hObject, eventdata, handles)
global vazios incertezaB variaveis list
% hObject    handle to popupmenu2 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: contents = get(hObject,'String') returns popupmenu2 contents
as cell array
%        contents{get(hObject,'Value')} returns selected item from
popupmenu2
valorsel = get(handles.popupmenu2,'Value');
if isempty(vazios)==0
if vazios(1,valorsel)~=0
    set(handles.listbox2,'String',eval(['list.'
cell2mat(variaveis.simbolo(valorsel))])))
    else
    set(handles.listbox2,'String','')
end
end
resultsStr = get(handles.listbox2,'String');
%este comando pega a variável que armazena os nomes do listbox
numResults = size(resultsStr,1);
%este comando cálcula o número de variáveis que temos no listbox
if numResults ~=0
    set([handles.pushbutton7],'Enable','on')
else
    set([handles.pushbutton7],'Enable','off')
end
% hObject    handle to popupmenu2 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: contents = get(hObject,'String') returns popupmenu2 contents
as cell array
%        contents{get(hObject,'Value')} returns selected item from
popupmenu2


% --- Executes during object creation, after setting all properties.
function popupmenu2_CreateFcn(hObject, eventdata, handles)
global variaveis n
% hObject    handle to popupmenu2 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: popupmenu controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end


set(hObject, 'String', variaveis.nome');

function edit4_Callback(hObject, eventdata, handles)
% hObject    handle to edit4 (see GCBO)
```

```matlab
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of edit4 as text
%        str2double(get(hObject,'String')) returns contents of edit4
as a double


% --- Executes during object creation, after setting all properties.
function edit4_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit4 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end


function edit5_Callback(hObject, eventdata, handles)
% hObject    handle to edit5 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of edit5 as text
%        str2double(get(hObject,'String')) returns contents of edit5
as a double


% --- Executes during object creation, after setting all properties.
function edit5_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit5 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end


% --- Executes on button press in pushbutton8.
function pushbutton8_Callback(hObject, eventdata, handles)

% hObject    handle to pushbutton8 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
run('help_coeficiente_de_sensibilidade')
```

```matlab
function edit6_Callback(hObject, eventdata, handles)
% hObject    handle to edit6 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of edit6 as text
%        str2double(get(hObject,'String')) returns contents of edit6
as a double


% --- Executes during object creation, after setting all properties.
function edit6_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit6 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%        See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end


% --- Executes on button press in pushbutton9.
function pushbutton9_Callback(hObject, eventdata, handles)
% hObject    handle to pushbutton9 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
run('help_04_grau')


% --- Executes on button press in pushbutton11.
function pushbutton11_Callback(hObject, eventdata, handles)

% hObject    handle to pushbutton11 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

close
run('tela_03_entrada_de_dados')


% --- Executes on button press in pushbutton12.
function pushbutton12_Callback(hObject, eventdata, handles)
global medicao variaveis metodo incertezaB vazios variavelsaida
if isempty(incertezaB)==1
    for j=1:length(variaveis.nome)
        eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.unidade={''''};']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(j)) '.valor=0;']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.liberdade=1^10;']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.sensibilidade=0;']);
eval(['incertezaB.' cell2mat(variaveis.simbolo(j)) '.nome={''''};']);
```

```matlab
eval(['incertezaB.' cell2mat(variaveis.simbolo(j)) '.fdp={1};']);
if medicao==1
    vazios=0;
end
    end
else
    for j=1:length(variaveis.nome)
        if vazios(j)==0
        eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.unidade={''''};']);
        eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.valor=0;']);
        eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.liberdade=1^10;']);
        eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.sensibilidade=0;']);
        eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.nome={''''};']);
        eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.fdp={1};']);
        end
    end
end
close
if medicao==0
run('tela_05_modelo')

else
    modelo=cell2mat(variaveis.simbolo);
    variavelsaida.nome=variaveis.nome;
    variavelsaida.unidade=variaveis.unidade;
    variavelsaida.simbolo=variaveis.simbolo;
    if metodo(1)==1
        run('Programa_ISO')
    end
    if metodo(2)==1
        run('MMC_codigo')
    end

    if metodo(1)==1
        run('tela_06_relatorio')
    end
    if metodo(2)==1
    run('Grafico')
    end
end
% hObject    handle to pushbutton12 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)




function edit7_Callback(hObject, eventdata, handles)
% hObject    handle to edit7 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of edit7 as text
```

```matlab
%        str2double(get(hObject,'String')) returns contents of edit7
as a double


% --- Executes during object creation, after setting all properties.
function edit7_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit7 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end




function edit8_Callback(hObject, eventdata, handles)
% hObject    handle to edit8 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of edit8 as text
%        str2double(get(hObject,'String')) returns contents of edit8
as a double


% --- Executes during object creation, after setting all properties.
function edit8_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit8 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end




function edit9_Callback(hObject, eventdata, handles)
% hObject    handle to edit9 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of edit9 as text
%        str2double(get(hObject,'String')) returns contents of edit9
as a double
```

```matlab
% --- Executes during object creation, after setting all properties.
function edit9_CreateFcn(hObject, eventdata, handles)
% hObject    handle to edit9 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end


% --- Executes during object creation, after setting all properties.
function pushbutton6_CreateFcn(hObject, eventdata, handles)
% hObject    handle to pushbutton6 (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called


Subrotina 1

function y=trirnd(a,b,tamanho)
% X = TRIRND(A,B,TAMANHO) Gera uma amostra que obedece a uma função
% densidade probabilidade triangular no intervalo entre A e B, com
tamanho
% igual a TAMANHO e moda igual a média de A e B.

t=[a,b];
media=(a+b)/2;
x=rand(1,tamanho);
pico=(media-min(t))/(max(t)-min(t));
y=zeros(1,tamanho);
B=max(t);
A=min(t);
y(x>pico)=B-sqrt((B-media)*(B-A)*(1-x(x>pico)));
y(x<=pico)=A+sqrt((media-A)*(B-A)*x(x<=pico));


Codigo programa Monte Carlo
global nc variaveis incertezaB modelo vazios saida intervalo

%valores=media
%limite_i=variaveis.desvio; para uniforme e triangular
%limite_s=variaveis.media; para uniforme e triangular
n=length(variaveis.nome);   %quantidade de variaveis
fdp=zeros(10^6,n);

x_quenusa=1;%loading bar
stopBar= progressbar(x_quenusa/10);
if (stopBar) break; end


if isempty(incertezaB)
```

```matlab
    for cnt4=1:n
        raizn=sqrt(variaveis.medidas(cnt4));
        if variaveis.fdp==1

fdp(:,cnt4)=normrnd(str2double(cell2mat(variaveis.media(cnt4))),str2do
uble(cell2mat(variaveis.desvio(cnt4)))*raizn,10^6,1);
        elseif variaveis.fdp==3

fdp(:,cnt4)=unifrnd(str2double(cell2mat(variaveis.media(cnt4))),str2do
uble(cell2mat(variaveis.desvio(cnt4))),[1,10^6])';
        else

fdp(:,cnt4)=trirnd(str2double(cell2mat(variaveis.media(cnt4))),str2dou
ble(cell2mat(variaveis.desvio(cnt4))),10^6);
        end
    end
else
    for cnt4=1:n
        if cell2mat(variaveis.fdp(cnt4))==1

fdp(:,cnt4)=normrnd(str2double(cell2mat(variaveis.media(cnt4))),str2do
uble(cell2mat(variaveis.desvio(cnt4))),10^6,1); % Variavel simulada
por MMC
        B=0;
        if vazios(cnt4)==1
            eval(['z=length(incertezaB.'
cell2mat(variaveis.simbolo(cnt4)) '.valor);']) %quantidade de
incertezas tipo B associadas
            eval(['fdpB=incertezaB.' cell2mat(variaveis.simbolo(cnt4))
'.fdp;'])
            eval(['sensiB=incertezaB.'
cell2mat(variaveis.simbolo(cnt4)) '.sensibilidade;'])
            B=zeros(10^6,z);
            for j_que_nao_usa=1:z
                if cell2mat(fdpB(j_que_nao_usa))==1

eval(['B(:,j_que_nao_usa)=sensiB(j_que_nao_usa)*normrnd(0,incertezaB.'
cell2mat(variaveis.simbolo(cnt4)) '.valor(j_que_nao_usa),10^6,1);'])
                elseif cell2mat(fdpB(j_que_nao_usa))==3
                eval(['a=incertezaB.'
cell2mat(variaveis.simbolo(cnt4)) '.valor(j_que_nao_usa);'])
                B(:,j_que_nao_usa)=sensiB(j_que_nao_usa)*unifrnd(-
a*sqrt(3),a*sqrt(3),[10^6,1]);
                else
                eval(['a=incertezaB.'
cell2mat(variaveis.simbolo(cnt4)) '.valor(j_que_nao_usa);'])
                B(:,j_que_nao_usa)=sensiB(j_que_nao_usa)*trirnd(-
a*sqrt(6),a*sqrt(6),10^6);
                end
            end
            fdp(:,cnt4)=fdp(:,cnt4)+sum(B,2);
        end
        elseif cell2mat(variaveis.fdp(cnt4))==3

fdp(:,cnt4)=unifrnd(str2double(cell2mat(variaveis.desvio(cnt4))),str2d
ouble(cell2mat(variaveis.media(cnt4))),[1,10^6])';
        B=0;
        if vazios(cnt4)==1
            eval(['z=length(incertezaB.'
cell2mat(variaveis.simbolo(cnt4)) '.valor);'])
```

```matlab
            eval(['fdpB=incertezaB.' cell2mat(variaveis.simbolo(cnt4))
'.fdp;'])
            eval(['sensiB=incertezaB.'
cell2mat(variaveis.simbolo(cnt4)) '.sensibilidade;'])
            B=zeros(10^6,z);
            for j_que_nao_usa=1:z
                if cell2mat(fdpB(j_que_nao_usa))==1

eval(['B(:,j_que_nao_usa)=sensiB(j_que_nao_usa)*normrnd(0,incertezaB.'
cell2mat(variaveis.simbolo(cnt4)) '.valor(j_que_nao_usa),10^6,1);'])
                elseif cell2mat(fdpB(j_que_nao_usa))==3
                eval(['a=incertezaB.'
cell2mat(variaveis.simbolo(cnt4)) '.valor(j_que_nao_usa);'])
                B(:,j_que_nao_usa)=sensiB(j_que_nao_usa)*unifrnd(-
a*sqrt(3),a*sqrt(3),[10^6,1]);
                else
                eval(['a=incertezaB.'
cell2mat(variaveis.simbolo(cnt4)) '.valor(j_que_nao_usa);'])
                B(:,j_que_nao_usa)=sensiB(j_que_nao_usa)*trirnd(-
a*sqrt(6),a*sqrt(6),10^6);
                end
            end
        end
            fdp(:,cnt4)=fdp(:,cnt4)+sum(B,2);

x_quenusa=2;%loading bar
stopBar= progressbar(x_quenusa/10);
if (stopBar) break; end

        else

fdp(:,cnt4)=trirnd(str2double(cell2mat(variaveis.desvio(cnt4))),str2do
uble(cell2mat(variaveis.media(cnt4))),10^6);
        B=0;
        if vazios(cnt4)==1
            eval(['z=length(incertezaB.'
cell2mat(variaveis.simbolo(cnt4)) '.valor);'])
            eval(['fdpB=incertezaB.' cell2mat(variaveis.simbolo(cnt4))
'.fdp;'])
            eval(['sensiB=incertezaB.'
cell2mat(variaveis.simbolo(cnt4)) '.sensibilidade;'])
            B=zeros(10^6,z);
            for j_que_nao_usa=1:z
                if cell2mat(fdpB(j_que_nao_usa))==1

eval(['B(:,j_que_nao_usa)=sensiB(j_que_nao_usa)*normrnd(0,str2double(c
ell2mat(incertezaB.' cell2mat(variaveis.simbolo(cnt4))
'.valor(j_que_nao_usa),10^6,1);'])
                elseif cell2mat(fdpB(j_que_nao_usa))==3
                eval(['a=incertezaB.'
cell2mat(variaveis.simbolo(cnt4)) '.valor(j_que_nao_usa);'])
                B(:,j_que_nao_usa)=sensiB(j_que_nao_usa)*unifrnd(-
a,a,[10^6,1]);
                else
                eval(['a=incertezaB.'
cell2mat(variaveis.simbolo(cnt4)) '.valor(j_que_nao_usa);'])
                B(:,j_que_nao_usa)=sensiB(j_que_nao_usa)*trirnd(-
a,a,10^6);
                end
            end
            fdp(:,cnt4)=fdp(:,cnt4)+sum(B,2);
```

```matlab
            end
          end
        end
    end

    x_quenusa=3;%loading bar
    stopBar= progressbar(x_quenusa/10);
    if (stopBar) break; end


    for cnt5=1:n
    eval([cell2mat(variaveis.simbolo(cnt5)) '=fdp(:,cnt5);']);
    x_quenusa=x_quenusa+1;%loading bar
    stopBar= progressbar(x_quenusa/10);
    if (stopBar) break; end


    end

    x_quenusa=7;%loading bar
    stopBar= progressbar(x_quenusa/10);
    if (stopBar) break; end


    modelon=double(modelo);
    multiplicacao=find(modelon==42);
    divisao=find(modelon==47);
    exponencial=find(modelon==94);
    z=length(modelo)+length(divisao)+length(multiplicacao)+length(exponenc
    ial);
    j_que_nao_usa=1;
    t_que_nao_usa=1;


    x_quenusa=8;%loading bar
    stopBar= progressbar(x_quenusa/10);
    if (stopBar) break; end


    while j_que_nao_usa<=z
        n=0;
        if modelon(t_que_nao_usa)==42
            modeloponto(j_que_nao_usa)='.';
            modeloponto(j_que_nao_usa+1)='*';
            n=1;
        elseif modelon(t_que_nao_usa)==47
            modeloponto(j_que_nao_usa)='.';
            modeloponto(j_que_nao_usa+1)='/';
            n=1;
        elseif modelon(t_que_nao_usa)==94
            modeloponto(j_que_nao_usa)='.';
            modeloponto(j_que_nao_usa+1)='^';
            n=1;
        else
            modeloponto(j_que_nao_usa)=modelo(t_que_nao_usa);
        end
        if n==1
            j_que_nao_usa=j_que_nao_usa+1;
        end
```

```matlab
        j_que_nao_usa=j_que_nao_usa+1;
        t_que_nao_usa=t_que_nao_usa+1;
    end


    % [ycdf xcdf]=cdfcalc(saida); %calcula os pontos da cdf
    % cdfinversa=spline(ycdf(2:end),xcdf); %calcula a funcao cdf
    % limalpha=1-str2num(nc)/100; %calcula o limite de alpha
    % pontos=linspace(0,limalpha,500000); % alpha
    % f=ppval(cdfinversa,pontos+str2num(nc)/100)-ppval(cdfinversa,pontos);
    % funcao com intervalos em que a area é c
    % menoralpha=pontos(find(f==min(f))); % alpha que possui menor
    intervalo
    % superior=1-menoralpha;
    % intervalo=ppval(cdfinversa,[menoralpha superior]); %intervalo

    saida=eval(modeloponto);
    varorden=sort(saida);
    r=1:length(saida);
    p=(r-0.5)/length(saida);
    xg=linspace(0,1-str2num(nc)/100,5000);
    funcao=interp1(p,varorden,xg+str2num(nc)/100)-interp1(p,varorden,xg);
    local=find(funcao==min(funcao));
    minimo=xg(local);
    limitesuperior=interp1(p,varorden,minimo+str2num(nc)/100);
    limiteinferior=interp1(p,varorden,(minimo));
    intervalo=[limiteinferior limitesuperior];

    x_quenusa=10;%loading bar
    stopBar= progressbar(x_quenusa/10);
    if (stopBar) break; end
    close

    save GEU_MMC


    Código ISOGUM

    global incertezaB variaveis variavelsaida modelo nc incertezapadrao
    ...
        incertezaexpandida k veff coefsvalor veffvariaveis
    incertezaexpandidas ...
        significativo incertezapadraos
    %valores=media
    %limite_i=variaveis.desvio; para uniforme e triangular
    %limite_s=variaveis.media; para uniforme e triangular
    n=length(variaveis.nome);

    for j= 1:n %transformacao em simbolicos e numeros
    % simbolicos(j)=sym(cell2mat(variaveis.simbolo(j)));
    media(j)=str2num(cell2mat(variaveis.media(j)));
    % linha=1
    medidas(j)=str2num(cell2mat(variaveis.medidas(j)));
    % linha=2
    desvios(j)=str2num(cell2mat(variaveis.desvio(j)));
    % linha=3
    eval(['o=length(incertezaB.' cell2mat(variaveis.simbolo(j))
    '.valor);']);
    % linha=4
    z(j)=desvios(j);
```

```matlab
% linha=5
if cell2mat(variaveis.fdp(j))==3 %Para varável de entrada
    desvios(j)=(media(j)-desvios(j))/(2*sqrt(3));
%     linha=6
    media(j)=(media(j)-desvios(j))/2;
%     linha=7
elseif cell2mat(variaveis.fdp(j))==2
    desvios(j)=(media(j)-desvios(j))/(2*sqrt(6));
%     linha=8
    media(j)=(media(j)-desvios(j))/2;
%     linha=9
end
   for i=1:o %Para incerteza B da variável de entrada

        eval(['incertezaBm(1,i)=incertezaB.'
cell2mat(variaveis.simbolo(j)) '.valor(1,i);']); %incerteza Bm é
variavel do tipo matriz
%         linha=10
        eval(['liberdade(1,i)=incertezaB.'
cell2mat(variaveis.simbolo(j)) '.liberdade(1,i);']);
%         linha=11
        eval(['sensibilidade(1,i)=incertezaB.'
cell2mat(variaveis.simbolo(j)) '.sensibilidade(1,i);']);
%         linha=11;
        eval(['fdp(1,i)=incertezaB.' cell2mat(variaveis.simbolo(j))
'.fdp(1,i);']);
%         linha=12
        if cell2mat(fdp(1,i))==3
            a=eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.valor(1,i);']);
%             linha=13
            eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.valor(1,i)=a/(2*sqrt(3));'])
%             linha=14
        elseif cell2mat(fdp(1,i))==2
            a=eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.valor(1,i);']);
%             linha=15
            eval(['incertezaB.' cell2mat(variaveis.simbolo(j))
'.valor(1,i)=a/(2*sqrt(6));']);
%             linha=16
        end
eval(['incertezaBm(1,i)=incertezaB.' cell2mat(variaveis.simbolo(j))
'.valor(1,i);']); %incerteza Bm é variavel do tipo matriz
% linha=17
incertezaBc(1,j)={incertezaBm}; %incerteza Bc é variavel do tipo cell
% linha=18
incertezaBc(2,j)={liberdade};
incertezaBc(3,j)={sensibilidade};
incertezaBc(4,j)={fdp};
   end
end
for j=1:n %coeficientes de sensibilidade
%     variaveis.coef(j)=diff(modelo,simbolicos(j));
%     coefsvalor(j)=(subs(variaveis.coef(j),simbolicos,media))^2;
coefsvalor(j)=der(j,variaveis.simbolo,media,modelo)^2;

end

for j=1:n
```

```matlab
variaveis.incerteza(j)=desvios(j)^2+sum(eval(['incertezaB.'
cell2mat(variaveis.simbolo(j))
'.valor.*cell2mat(incertezaBc(3,j))']).^2);
end

incertezapadrao=sum(coefsvalor.*variaveis.incerteza);

%%%%%%%%%%%%%%%%%%%%%%%%%%%%graus de
liberdade%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
for j=1:n

veffvariaveis(j)=variaveis.incerteza(j)^2/((desvios(j)^4/(medidas(j)-
1))+sum(((cell2mat(incertezaBc(3,j)).*cell2mat(incertezaBc(1,j))).^4.
/liberdade));
end

veff=floor(incertezapadrao^2/sum((coefsvalor.*variaveis.incerteza).^2.
/veffvariaveis));
%%%%%%%%%%%%%%%%%%%%%%%%%%%t de
student%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
 veff=eval('veff');
if isa(veff,'sym')
veff=eval(veff);
end
 k=-tinv((1-str2num(nc)/100)/2,veff);
 incertezaexpandida=sqrt(incertezapadrao)*k;
 incertezaexpandida=eval('incertezaexpandida');
 if isa(incertezaexpandida,'sym')
     incertezaexpandida=eval(incertezaexpandida);
 end
 incertezapadrao=sqrt(incertezapadrao);
 if isa(incertezapadrao,'sym')
     incertezapadrao=eval(incertezapadrao);
 end
 desvios=z;

if significativo==1
incertezapadraos=sprintf('%3.1e',incertezapadrao);
incertezaexpandidas=sprintf('%3.1e',incertezaexpandida);
else
incertezapadraos=sprintf('%3.0e',incertezapadrao);
incertezaexpandidas=sprintf('%3.0e',incertezaexpandida);
end

save GEU_GUM
```