```
;----------------------------------------------------------------------

load "$NCARG_ROOT/lib/ncarg/nclscripts/csm/gsn_code.ncl"
load "$NCARG_ROOT/lib/ncarg/nclscripts/csm/gsn_csm.ncl"

begin
;---Read data
  a1   =
addfile("/media/data/precip_new/global/ensemble/mongolia_ensmean_hist_fm_ymm_pr_mmday.nc
","r")
  a2   =
addfile("/media/data/precip_new/global/ensemble/mongolia_ensmean_midHol_fm_ymm_pr_mmda
y.nc","r")
  a3   =
addfile("/media/data/precip_new/global/ensemble/mongolia_ensmean_lgm_fm_ymm_pr_mmday.n
c","r")
  a4   =
addfile("/media/data/temperature_models/global/ensemble/mongolia_ensmean_hist_fm_ymm_temp
_celsius.nc","r")
  a5   =
addfile("/media/data/temperature_models/global/ensemble/mongolia_ensmean_midHol_fm_ymm_t
emp_celsius.nc","r")
  a6   =
addfile("/media/data/temperature_models/global/ensemble/mongolia_ensmean_lgm_fm_ymm_tem
p_celsius.nc","r")
  a7   = addfile("/media/data/precip_new/global/ensemble/mongolia_ensmean_midHol-
hist_fm_ymm_pr_mmday.nc","r")
  a8   = addfile("/media/data/precip_new/global/ensemble/mongolia_ensmean_lgm-
hist_fm_ymm_pr_mmday.nc","r")
  a9   = addfile("/media/data/temperature_models/global/ensemble/mongolia_ensmean_midH-
hist_fm_ymm_celsius.nc","r")
  a10  = addfile("/media/temperature_models/global/ensemble/mongolia_ensmean_lgm-
hist_fm_ymm_celsius.nc","r")

  x1  = a1->pr
  x2  = a2->pr
  x3  = a3->pr
  x4  = a4->tas
  x5  = a5->tas
  x6  = a6->tas
  x7  = a7->pr
  x8  = a8->pr
  x9  = a9->tas
  x10 = a10->tas

  hist1    = dim_avg_n_Wrap(x1,(/1,2/))
  midHol2  = dim_avg_n_Wrap(x2,(/1,2/))
  lgm3     = dim_avg_n_Wrap(x3,(/1,2/))
  hist4    = dim_avg_n_Wrap(x4,(/1,2/))
  midHol5  = dim_avg_n_Wrap(x5,(/1,2/))
  lgm6     = dim_avg_n_Wrap(x6,(/1,2/))
  midHol_hist7  = dim_avg_n_Wrap(x7,(/1,2/))
```

```
  lgm_hist8     = dim_avg_n_Wrap(x8,(/1,2/))
  midHol_hist9  = dim_avg_n_Wrap(x9,(/1,2/))
  lgm_hist10    = dim_avg_n_Wrap(x10,(/1,2/))


;---Open workstation and change color map
  wks = gsn_open_wks("png","mongolia_ymm-ensmean-view")   ; "x11", "ps", "pdf", "png"

;---Create plot array
  plot_A = new(3, graphic)
  plot_B = new(3, graphic)
  plot_C = new(2, graphic)
  plot_D = new(2, graphic)

  res         = True

  date1     =  a1->time(::-1)        ;-- retrieve the time values and reverse it
  utc_date =  cd_calendar(date1, 0)                    ;-- convert date to UT-referenced date
  year     =  sprinti("%0.4i",tointeger(utc_date(:,0)))   ;-- get year as integer value
  mon      =  sprinti("%0.2i",tointeger(utc_date(:,1)))   ;-- get month as integer value
  day      =  sprinti("%0.2i",tointeger(utc_date(:,2)))   ;-- get day as integer value
  hours    =  sprinti("%0.2i",tointeger(utc_date(:,3)))   ;-- get day as integer value
  mins     =  sprinti("%0.2i",tointeger(utc_date(:,4)))   ;-- get day as integer value
  date_str = mon+"/"+year                          ;-- yyyy/mm

  tstart   =  1850                                ;-- start date
  tend     =  1949                                ;-- end date
  ind_time =  ind(where(year.ge.tstart.and.year.le.tend,True,False));-- retrieve valid indices
  time1    =  date1(ind_time)                        ;-- get dates within date interval
  data1    =  hist1(ind_time)                       ;-- get data within date interval
  labels   =  date_str(ind_time)                     ;-- get labels within date interval

  res@tmXBMode           = "Explicit"  ;-- use explicit x-axis labels
  res@tmXBValues         =  time1(::-1)       ;-- original date values
  res@tmXBLabels         =
(/"Jan","Feb","Mar","Apr","May","Jun","Jul","Aug","Sep","Oct","Nov","Dec"/)   ;-- date labels
  res@gsnDraw            = False  ; don't draw the plots, gsn_panel will draw them
  res@gsnFrame           = False  ; don't advance the frame, gsn_panel will
  res@gsnMaximize          = False
  res@trYMinF            =  1.7       ;-- min y-axis value
  res@trYMaxF            =  2.9       ;-- max y-axis value
  res@tiYAxisString       = "mean precipitation (mm/day)"
  res@tiYAxisFontHeightF   = 0.05
  res@tmXBLabelFontHeightF = 0.01       ;-- decrease font size
  res@tmXBLabelJust        = "CenterRight"
  res@tmXBLabelDeltaF      =  1.0        ;-- move x-axis labels
  res@tmXBLabelAngleF      =  50.        ;-- rotate x-axis labels
  res@tmLabelAutoStride    =  True

  res@xyLineColors              = "blue"  ;-- line colors
  res@xyLineThicknessF          =  2.0      ;-- set line thickness
  res@tmXMajorGrid              =  True     ;-- turn on x-grid
```

```
  res@tmXMajorGridThicknessF      =  1.0      ;-- thinner the lines
  res@tmXMajorGridLineDashPattern =  2        ;-- use dashed lines
  res@tmYMajorGrid                =  True     ;-- turn on y-grid
  res@tmYMajorGridThicknessF      =  1.0      ;-- thinner the lines
  res@tmYMajorGridLineDashPattern =  2        ;-- use dashed lines

  res@vpWidthF  = 1.4    ; set width of plot
  res@vpHeightF = 1.0    ; set height of plot
  res@vpXF      = 0.1    ; set left hand side start point of plot

  res@gsnStringFont = "helvetica-bold"
  res@tmXBLabelFontHeightF = 0.045
  res@tmYLLabelFontHeightF = 0.045

  res@gsnCenterString = "historical"
  res@gsnCenterStringFontHeightF = 0.055
  plot_A(0) = gsn_csm_xy(wks,time1,data1,res)


  date2     =  a2->time(::-1)
  utc_date =  cd_calendar(date2, 0)                    ;-- convert date to UT-referenced date
  year     =  sprinti("%0.4i",tointeger(utc_date(:,0)))   ;-- get year as integer value
  mon      =  sprinti("%0.2i",tointeger(utc_date(:,1)))   ;-- get month as integer value
  day      =  sprinti("%0.2i",tointeger(utc_date(:,2)))   ;-- get day as integer value
  hours    =  sprinti("%0.2i",tointeger(utc_date(:,3)))   ;-- get day as integer value
  mins     =  sprinti("%0.2i",tointeger(utc_date(:,4)))   ;-- get day as integer value
  date_str = mon+"/"+year                              ;-- yyyy/mm

  tstart   =  1000                                    ;-- start date
  tend     =  1099                                    ;-- end date
  ind_time =  ind(where(year.ge.tstart.and.year.le.tend,True,False))  ;-- retrieve valid indices
  time2    =  date2(ind_time)                          ;-- get dates within date interval
  data2    =  midHol2(ind_time)                          ;-- get data within date interval
  labels   =  date_str(ind_time)                       ;-- get labels within date interval

  res@tmXBMode           = "Explicit"  ;-- use explicit x-axis labels
  res@tmXBValues         =  time2(::-1)      ;-- original date values
  res@tmXBLabels         =
(/"Jan","Feb","Mar","Apr","May","Jun","Jul","Aug","Sep","Oct","Nov","Dec"/)   ;-- date labels
  res@gsnDraw            = False  ; don't draw the plots, gsn_panel will draw them
  res@gsnFrame           = False  ; don't advance the frame, gsn_panel will
  res@gsnMaximize        = False
  res@trYMinF            =  1.7       ;-- min y-axis value
  res@trYMaxF            =  2.9       ;-- max y-axis value
  res@tiYAxisString      = "mean precipitation (mm/day)"
  res@tiYAxisFontHeightF   = 0.05
  res@tmXBLabelFontHeightF = 0.01       ;-- decrease font size
  res@tmXBLabelJust      = "CenterRight"
  res@tmXBLabelDeltaF    =  1.0        ;-- move x-axis labels
  res@tmXBLabelAngleF    =  50.        ;-- rotate x-axis labels
  res@tmLabelAutoStride  =  True
```

```
  res@xyLineColors              = "green"   ;-- line colors
  res@xyLineThicknessF           =  2.0     ;-- set line thickness
  res@tmXMajorGrid               =  True    ;-- turn on x-grid
  res@tmXMajorGridThicknessF     =  1.0     ;-- thinner the lines
  res@tmXMajorGridLineDashPattern =  2      ;-- use dashed lines
  res@tmYMajorGrid               =  True    ;-- turn on y-grid
  res@tmYMajorGridThicknessF     =  1.0     ;-- thinner the lines
  res@tmYMajorGridLineDashPattern =  2      ;-- use dashed lines

  res@vpWidthF  = 1.4    ; set width of plot
  res@vpHeightF = 1.0    ; set height of plot
  res@vpXF      = 0.1    ; set left hand side start point of plot

  res@gsnStringFont = "helvetica-bold"
  res@tmXBLabelFontHeightF = 0.045
  res@tmYLLabelFontHeightF = 0.045

  res@gsnCenterString = "midHolocene"
  res@gsnCenterStringFontHeightF = 0.055
  plot_A(1)  = gsn_csm_xy(wks,time2,data2,res)

  date3     =  a3->time(::-1)
  utc_date =  cd_calendar(date3, 0)                  ;-- convert date to UT-referenced date
  year     =  sprinti("%0.4i",tointeger(utc_date(:,0)))   ;-- get year as integer value
  mon      =  sprinti("%0.2i",tointeger(utc_date(:,1)))   ;-- get month as integer value
  day      =  sprinti("%0.2i",tointeger(utc_date(:,2)))   ;-- get day as integer value
  hours    =  sprinti("%0.2i",tointeger(utc_date(:,3)))   ;-- get day as integer value
  mins     =  sprinti("%0.2i",tointeger(utc_date(:,4)))   ;-- get day as integer value
  date_str = mon+"/"+year                            ;-- yyyy/mm

  tstart   =  1800                                  ;-- start date
  tend     =  1899                                  ;-- end date
  ind_time =  ind(where(year.ge.tstart.and.year.le.tend,True,False))  ;-- retrieve valid indices
  time3    =  date3(ind_time)                        ;-- get dates within date interval
  data3    =  lgm3(ind_time)                        ;-- get data within date interval
  labels   =  date_str(ind_time)                     ;-- get labels within date interval

  res@tmXBMode           = "Explicit"  ;-- use explicit x-axis labels
  res@tmXBValues         =  time3(::-1)
  res@tmXBLabels         =
(/"Jan","Feb","Mar","Apr","May","Jun","Jul","Aug","Sep","Oct","Nov","Dec"/)
  res@gsnDraw            = False  ; don't draw the plots, gsn_panel will draw them
  res@gsnFrame           = False  ; don't advance the frame, gsn_panel will
  res@gsnMaximize         = False
  res@trYMinF            =  1.7       ;-- min y-axis value
  res@trYMaxF            =  2.9       ;-- max y-axis value
  res@tiYAxisString       = "mean precipitation (mm/day)"
  res@tiYAxisFontHeightF   = 0.05
  res@tmXBLabelFontHeightF = 0.01       ;-- decrease font size
  res@tmXBLabelJust       = "CenterRight"
  res@tmXBLabelDeltaF     =  1.0        ;-- move x-axis labels
  res@tmXBLabelAngleF     =  50.        ;-- rotate x-axis labels
```

```
  res@tmLabelAutoStride    =  True

  res@xyLineColors              = "brown"  ;-- line colors
  res@xyLineThicknessF          =  2.0     ;-- set line thickness
  res@tmXMajorGrid              =  True    ;-- turn on x-grid
  res@tmXMajorGridThicknessF    =  1.0     ;-- thinner the lines
  res@tmXMajorGridLineDashPattern =  2       ;-- use dashed lines
  res@tmYMajorGrid              =  True    ;-- turn on y-grid
  res@tmYMajorGridThicknessF    =  1.0     ;-- thinner the lines
  res@tmYMajorGridLineDashPattern =  2       ;-- use dashed lines

  res@vpWidthF  = 1.4   ; set width of plot
  res@vpHeightF = 1.0   ; set height of plot
  res@vpXF      = 0.1   ; set left hand side start point of plot

  res@gsnStringFont = "helvetica-bold"
  res@tmXBLabelFontHeightF = 0.045
  res@tmYLLabelFontHeightF = 0.045

  res@gsnCenterString = "lgm"
  res@gsnCenterStringFontHeightF = 0.055
  plot_A(2) = gsn_csm_xy(wks,time3,data3,res)
;*******************************************
  date4     =  a4->time(::-1)       ;-- retrieve the time values and reverse it
  utc_date =  cd_calendar(date4, 0)                  ;-- convert date to UT-referenced date
  year     =  sprinti("%0.4i",tointeger(utc_date(:,0)))   ;-- get year as integer value
  mon      =  sprinti("%0.2i",tointeger(utc_date(:,1)))   ;-- get month as integer value
  day      =  sprinti("%0.2i",tointeger(utc_date(:,2)))   ;-- get day as integer value
  hours    =  sprinti("%0.2i",tointeger(utc_date(:,3)))   ;-- get day as integer value
  mins     =  sprinti("%0.2i",tointeger(utc_date(:,4)))   ;-- get day as integer value
  date_str = mon+"/"+year                          ;-- yyyy/mm

  tstart   =  1850                                ;-- start date
  tend     =  1949                                ;-- end date
  ind_time =  ind(where(year.ge.tstart.and.year.le.tend,True,False));-- retrieve valid indices
  time4    =  date4(ind_time)                     ;-- get dates within date interval
  data4    =  hist4(ind_time)                     ;-- get data within date interval
  labels   =  date_str(ind_time)                  ;-- get labels within date interval

  res@tmXBMode           = "Explicit"  ;-- use explicit x-axis labels
  res@tmXBValues         =  time4(::-1)      ;-- original date values
  res@tmXBLabels         =
(/"Jan","Feb","Mar","Apr","May","Jun","Jul","Aug","Sep","Oct","Nov","Dec"/)   ;-- date labels
  res@gsnDraw            = False  ; don't draw the plots, gsn_panel will draw them
  res@gsnFrame           = False  ; don't advance the frame, gsn_panel will
  res@gsnMaximize          = False
  res@trYMinF            =  1.7      ;-- min y-axis value
  res@trYMaxF            =  2.9      ;-- max y-axis value
  res@tiYAxisString       = "mean precipitation (mm/day)"
  res@tiYAxisFontHeightF   = 0.05
  res@tmXBLabelFontHeightF = 0.01       ;-- decrease font size
  res@tmXBLabelJust       = "CenterRight"
```

```
  res@tmXBLabelDeltaF      =  1.0       ;-- move x-axis labels
  res@tmXBLabelAngleF      =  50.       ;-- rotate x-axis labels
  res@tmLabelAutoStride    =  True

  res@xyLineColors              = "blue"  ;-- line colors
  res@xyLineThicknessF          =  2.0     ;-- set line thickness
  res@tmXMajorGrid              =  True    ;-- turn on x-grid
  res@tmXMajorGridThicknessF    =  1.0     ;-- thinner the lines
  res@tmXMajorGridLineDashPattern =  2       ;-- use dashed lines
  res@tmYMajorGrid              =  True    ;-- turn on y-grid
  res@tmYMajorGridThicknessF    =  1.0     ;-- thinner the lines
  res@tmYMajorGridLineDashPattern =  2       ;-- use dashed lines

  res@vpWidthF  = 1.4    ; set width of plot
  res@vpHeightF = 1.0    ; set height of plot
  res@vpXF      = 0.1    ; set left hand side start point of plot

  res@gsnStringFont = "helvetica-bold"
  res@tmXBLabelFontHeightF = 0.045
  res@tmYLLabelFontHeightF = 0.045

  res@gsnCenterString = "historical"
  res@gsnCenterStringFontHeightF = 0.055
  plot_B(0) = gsn_csm_xy(wks,time4,data4,res)


  date5     =  a5->time(::-1)
  utc_date =  cd_calendar(date5, 0)                  ;-- convert date to UT-referenced date
  year     =  sprinti("%0.4i",tointeger(utc_date(:,0)))   ;-- get year as integer value
  mon      =  sprinti("%0.2i",tointeger(utc_date(:,1)))   ;-- get month as integer value
  day      =  sprinti("%0.2i",tointeger(utc_date(:,2)))   ;-- get day as integer value
  hours    =  sprinti("%0.2i",tointeger(utc_date(:,3)))   ;-- get day as integer value
  mins     =  sprinti("%0.2i",tointeger(utc_date(:,4)))   ;-- get day as integer value
  date_str = mon+"/"+year                          ;-- yyyy/mm

  tstart   =  1000                                 ;-- start date
  tend     =  1099                                 ;-- end date
  ind_time =  ind(where(year.ge.tstart.and.year.le.tend,True,False))  ;-- retrieve valid indices
  time5    =  date5(ind_time)                      ;-- get dates within date interval
  data5    =  midHol5(ind_time)                    ;-- get data within date interval
  labels   =  date_str(ind_time)                   ;-- get labels within date interval

  res@tmXBMode           = "Explicit"  ;-- use explicit x-axis labels
  res@tmXBValues         =  time5(::-1)      ;-- original date values
  res@tmXBLabels         =
(/"Jan","Feb","Mar","Apr","May","Jun","Jul","Aug","Sep","Oct","Nov","Dec"/)   ;-- date labels
  res@gsnDraw            = False  ; don't draw the plots, gsn_panel will draw them
  res@gsnFrame           = False  ; don't advance the frame, gsn_panel will
  res@gsnMaximize          = False
  res@trYMinF            =  1.7      ;-- min y-axis value
  res@trYMaxF            =  2.9      ;-- max y-axis value
  res@tiYAxisString       = "mean precipitation (mm/day)"
```

```
  res@tiYAxisFontHeightF   = 0.05
  res@tmXBLabelFontHeightF = 0.01       ;-- decrease font size
  res@tmXBLabelJust        = "CenterRight"
  res@tmXBLabelDeltaF      =  1.0       ;-- move x-axis labels
  res@tmXBLabelAngleF      =  50.       ;-- rotate x-axis labels
  res@tmLabelAutoStride    =  True

  res@xyLineColors              = "green"   ;-- line colors
  res@xyLineThicknessF          =  2.0      ;-- set line thickness
  res@tmXMajorGrid              =  True     ;-- turn on x-grid
  res@tmXMajorGridThicknessF    =  1.0      ;-- thinner the lines
  res@tmXMajorGridLineDashPattern =  2      ;-- use dashed lines
  res@tmYMajorGrid              =  True     ;-- turn on y-grid
  res@tmYMajorGridThicknessF    =  1.0      ;-- thinner the lines
  res@tmYMajorGridLineDashPattern =  2      ;-- use dashed lines

  res@vpWidthF  = 1.4    ; set width of plot
  res@vpHeightF = 1.0    ; set height of plot
  res@vpXF      = 0.1    ; set left hand side start point of plot

  res@gsnStringFont = "helvetica-bold"
  res@tmXBLabelFontHeightF = 0.045
  res@tmYLLabelFontHeightF = 0.045

  res@gsnCenterString = "midHolocene"
  res@gsnCenterStringFontHeightF = 0.055
  plot_B(1)  = gsn_csm_xy(wks,time5,data5,res)

  date6    =  a6->time(::-1)
  utc_date =  cd_calendar(date6, 0)                  ;-- convert date to UT-referenced date
  year     =  sprinti("%0.4i",tointeger(utc_date(:,0)))   ;-- get year as integer value
  mon      =  sprinti("%0.2i",tointeger(utc_date(:,1)))   ;-- get month as integer value
  day      =  sprinti("%0.2i",tointeger(utc_date(:,2)))   ;-- get day as integer value
  hours    =  sprinti("%0.2i",tointeger(utc_date(:,3)))   ;-- get day as integer value
  mins     =  sprinti("%0.2i",tointeger(utc_date(:,4)))   ;-- get day as integer value
  date_str = mon+"/"+year                            ;-- yyyy/mm

  tstart   =  1800                                   ;-- start date
  tend     =  1899                                   ;-- end date
  ind_time =  ind(where(year.ge.tstart.and.year.le.tend,True,False))  ;-- retrieve valid indices
  time6    =  date6(ind_time)                        ;-- get dates within date interval
  data6    =  lgm6(ind_time)                        ;-- get data within date interval
  labels   =  date_str(ind_time)                     ;-- get labels within date interval

  res@tmXBMode           = "Explicit"  ;-- use explicit x-axis labels
  res@tmXBValues         =  time6(::-1)
  res@tmXBLabels         =
(/"Jan","Feb","Mar","Apr","May","Jun","Jul","Aug","Sep","Oct","Nov","Dec"/)
  res@gsnDraw            = False  ; don't draw the plots, gsn_panel will draw them
  res@gsnFrame           = False  ; don't advance the frame, gsn_panel will
  res@gsnMaximize        = False
  res@trYMinF            =  1.7       ;-- min y-axis value
```

```
  res@trYMaxF             =  2.9      ;-- max y-axis value
  res@tiYAxisString       = "mean precipitation (mm/day)"
  res@tiYAxisFontHeightF   = 0.05
  res@tmXBLabelFontHeightF = 0.01      ;-- decrease font size
  res@tmXBLabelJust       = "CenterRight"
  res@tmXBLabelDeltaF     =  1.0       ;-- move x-axis labels
  res@tmXBLabelAngleF     =  50.       ;-- rotate x-axis labels
  res@tmLabelAutoStride   =  True

  res@xyLineColors              = "brown"  ;-- line colors
  res@xyLineThicknessF          =  2.0     ;-- set line thickness
  res@tmXMajorGrid              =  True    ;-- turn on x-grid
  res@tmXMajorGridThicknessF    =  1.0     ;-- thinner the lines
  res@tmXMajorGridLineDashPattern =  2       ;-- use dashed lines
  res@tmYMajorGrid              =  True    ;-- turn on y-grid
  res@tmYMajorGridThicknessF    =  1.0     ;-- thinner the lines
  res@tmYMajorGridLineDashPattern =  2       ;-- use dashed lines

  res@vpWidthF  = 1.4   ; set width of plot
  res@vpHeightF = 1.0   ; set height of plot
  res@vpXF      = 0.1   ; set left hand side start point of plot

  res@gsnStringFont = "helvetica-bold"
  res@tmXBLabelFontHeightF = 0.045
  res@tmYLLabelFontHeightF = 0.045

  res@gsnCenterString = "lgm"
  res@gsnCenterStringFontHeightF = 0.055
  plot_B(2) = gsn_csm_xy(wks,time6,data6,res)
;*****************************************
  date7     =  a7->time(::-1)       ;-- retrieve the time values and reverse it
  utc_date =  cd_calendar(date7, 0)                  ;-- convert date to UT-referenced date
  year     =  sprinti("%0.4i",tointeger(utc_date(:,0)))   ;-- get year as integer value
  mon      =  sprinti("%0.2i",tointeger(utc_date(:,1)))   ;-- get month as integer value
  day      =  sprinti("%0.2i",tointeger(utc_date(:,2)))   ;-- get day as integer value
  hours    =  sprinti("%0.2i",tointeger(utc_date(:,3)))   ;-- get day as integer value
  mins     =  sprinti("%0.2i",tointeger(utc_date(:,4)))   ;-- get day as integer value
  date_str = mon+"/"+year                          ;-- yyyy/mm

  tstart   =  1000                                ;-- start date
  tend     =  1099                                 ;-- end date
  ind_time =  ind(where(year.ge.tstart.and.year.le.tend,True,False));-- retrieve valid indices
  time7    =  date7(ind_time)                        ;-- get dates within date interval
  data7    =  midHol_hist7(ind_time)                       ;-- get data within date interval
  labels   =  date_str(ind_time)                    ;-- get labels within date interval

  res@tmXBMode            = "Explicit"  ;-- use explicit x-axis labels
  res@tmXBValues          =  time7(::-1)       ;-- original date values
  res@tmXBLabels          =
(/"Jan","Feb","Mar","Apr","May","Jun","Jul","Aug","Sep","Oct","Nov","Dec"/)   ;-- date labels
  res@gsnDraw             = False  ; don't draw the plots, gsn_panel will draw them
  res@gsnFrame            = False  ; don't advance the frame, gsn_panel will
```

```
res@gsnMaximize          = False
res@trYMinF              =  1.7       ;-- min y-axis value
res@trYMaxF              =  2.9       ;-- max y-axis value
res@tiYAxisString        = "mean precipitation (mm/day)"
res@tiYAxisFontHeightF   = 0.05
res@tmXBLabelFontHeightF = 0.01       ;-- decrease font size
res@tmXBLabelJust        = "CenterRight"
res@tmXBLabelDeltaF      =  1.0       ;-- move x-axis labels
res@tmXBLabelAngleF      =  50.       ;-- rotate x-axis labels
res@tmLabelAutoStride    =  True

res@xyLineColors               = "blue"  ;-- line colors
res@xyLineThicknessF           =  2.0    ;-- set line thickness
res@tmXMajorGrid               =  True   ;-- turn on x-grid
res@tmXMajorGridThicknessF     =  1.0    ;-- thinner the lines
res@tmXMajorGridLineDashPattern =  2     ;-- use dashed lines
res@tmYMajorGrid               =  True   ;-- turn on y-grid
res@tmYMajorGridThicknessF     =  1.0    ;-- thinner the lines
res@tmYMajorGridLineDashPattern =  2     ;-- use dashed lines

res@vpWidthF  = 1.4    ; set width of plot
res@vpHeightF = 1.0    ; set height of plot
res@vpXF      = 0.1    ; set left hand side start point of plot

res@gsnStringFont = "helvetica-bold"
res@tmXBLabelFontHeightF = 0.045
res@tmYLLabelFontHeightF = 0.045

res@gsnCenterString = "midHol-hist"
res@gsnCenterStringFontHeightF = 0.055
plot_C(0) = gsn_csm_xy(wks,time7,data7,res)


date8     =  a8->time(::-1)
utc_date =  cd_calendar(date8, 0)                    ;-- convert date to UT-referenced date
year     =  sprinti("%0.4i",tointeger(utc_date(:,0)))   ;-- get year as integer value
mon      =  sprinti("%0.2i",tointeger(utc_date(:,1)))   ;-- get month as integer value
day      =  sprinti("%0.2i",tointeger(utc_date(:,2)))   ;-- get day as integer value
hours    =  sprinti("%0.2i",tointeger(utc_date(:,3)))   ;-- get day as integer value
mins     =  sprinti("%0.2i",tointeger(utc_date(:,4)))   ;-- get day as integer value
date_str = mon+"/"+year                          ;-- yyyy/mm

tstart   =  1800                                 ;-- start date
tend     =  1899                                 ;-- end date
ind_time =  ind(where(year.ge.tstart.and.year.le.tend,True,False))  ;-- retrieve valid indices
time8    =  date8(ind_time)                      ;-- get dates within date interval
data8    =  lgm_hist8(ind_time)                      ;-- get data within date interval
labels   =  date_str(ind_time)                   ;-- get labels within date interval

res@tmXBMode           = "Explicit"  ;-- use explicit x-axis labels
res@tmXBValues         =  time8(::-1)       ;-- original date values
res@tmXBLabels         =
```

```
(/"Jan","Feb","Mar","Apr","May","Jun","Jul","Aug","Sep","Oct","Nov","Dec"/)   ;-- date labels
  res@gsnDraw             = False  ; don't draw the plots, gsn_panel will draw them
  res@gsnFrame            = False  ; don't advance the frame, gsn_panel will
  res@gsnMaximize           = False
  res@trYMinF             =  1.7       ;-- min y-axis value
  res@trYMaxF             =  2.9       ;-- max y-axis value
  res@tiYAxisString       = "mean precipitation (mm/day)"
  res@tiYAxisFontHeightF   = 0.05
  res@tmXBLabelFontHeightF = 0.01       ;-- decrease font size
  res@tmXBLabelJust       = "CenterRight"
  res@tmXBLabelDeltaF      =  1.0       ;-- move x-axis labels
  res@tmXBLabelAngleF      =  50.       ;-- rotate x-axis labels
  res@tmLabelAutoStride    =  True

  res@xyLineColors              = "green"   ;-- line colors
  res@xyLineThicknessF           =  2.0     ;-- set line thickness
  res@tmXMajorGrid               =  True    ;-- turn on x-grid
  res@tmXMajorGridThicknessF      =  1.0     ;-- thinner the lines
  res@tmXMajorGridLineDashPattern =  2       ;-- use dashed lines
  res@tmYMajorGrid               =  True    ;-- turn on y-grid
  res@tmYMajorGridThicknessF      =  1.0     ;-- thinner the lines
  res@tmYMajorGridLineDashPattern =  2       ;-- use dashed lines

  res@vpWidthF  = 1.4    ; set width of plot
  res@vpHeightF = 1.0    ; set height of plot
  res@vpXF      = 0.1    ; set left hand side start point of plot

  res@gsnStringFont = "helvetica-bold"
  res@tmXBLabelFontHeightF = 0.045
  res@tmYLLabelFontHeightF = 0.045

  res@gsnCenterString = "lgm-hist"
  res@gsnCenterStringFontHeightF = 0.055
  plot_C(1)  = gsn_csm_xy(wks,time8,data8,res)
;*****************************************
  date9     =  a9->time(::-1)
  utc_date =  cd_calendar(date9, 0)                   ;-- convert date to UT-referenced date
  year     =  sprinti("%0.4i",tointeger(utc_date(:,0)))   ;-- get year as integer value
  mon      =  sprinti("%0.2i",tointeger(utc_date(:,1)))   ;-- get month as integer value
  day      =  sprinti("%0.2i",tointeger(utc_date(:,2)))   ;-- get day as integer value
  hours    =  sprinti("%0.2i",tointeger(utc_date(:,3)))   ;-- get day as integer value
  mins     =  sprinti("%0.2i",tointeger(utc_date(:,4)))   ;-- get day as integer value
  date_str = mon+"/"+year                          ;-- yyyy/mm

  tstart   =  1000                                ;-- start date
  tend     =  1099                                ;-- end date
  ind_time =  ind(where(year.ge.tstart.and.year.le.tend,True,False))  ;-- retrieve valid indices
  time9    =  date9(ind_time)                     ;-- get dates within date interval
  data9    =  midHol_hist9(ind_time)                    ;-- get data within date interval
  labels   =  date_str(ind_time)                  ;-- get labels within date interval

  res@tmXBMode          = "Explicit"  ;-- use explicit x-axis labels
```

```
  res@tmXBValues          =  time9(::-1)
  res@tmXBLabels          =
(/"Jan","Feb","Mar","Apr","May","Jun","Jul","Aug","Sep","Oct","Nov","Dec"/)
  res@gsnDraw             = False  ; don't draw the plots, gsn_panel will draw them
  res@gsnFrame            = False  ; don't advance the frame, gsn_panel will
  res@gsnMaximize         = False
  res@trYMinF             =  1.7      ;-- min y-axis value
  res@trYMaxF             =  2.9      ;-- max y-axis value
  res@tiYAxisString       = "mean precipitation (mm/day)"
  res@tiYAxisFontHeightF   = 0.05
  res@tmXBLabelFontHeightF = 0.01      ;-- decrease font size
  res@tmXBLabelJust       = "CenterRight"
  res@tmXBLabelDeltaF     =  1.0       ;-- move x-axis labels
  res@tmXBLabelAngleF     =  50.       ;-- rotate x-axis labels
  res@tmLabelAutoStride    =  True

  res@xyLineColors              = "brown"  ;-- line colors
  res@xyLineThicknessF          =  2.0     ;-- set line thickness
  res@tmXMajorGrid              =  True    ;-- turn on x-grid
  res@tmXMajorGridThicknessF    =  1.0     ;-- thinner the lines
  res@tmXMajorGridLineDashPattern =  2       ;-- use dashed lines
  res@tmYMajorGrid              =  True    ;-- turn on y-grid
  res@tmYMajorGridThicknessF    =  1.0     ;-- thinner the lines
  res@tmYMajorGridLineDashPattern =  2       ;-- use dashed lines

  res@vpWidthF  = 1.4   ; set width of plot
  res@vpHeightF = 1.0   ; set height of plot
  res@vpXF      = 0.1   ; set left hand side start point of plot

  res@gsnStringFont = "helvetica-bold"
  res@tmXBLabelFontHeightF = 0.045
  res@tmYLLabelFontHeightF = 0.045

  res@gsnCenterString = "midHol-hist"
  res@gsnCenterStringFontHeightF = 0.055
  plot_D(0) = gsn_csm_xy(wks,time9,data9,res)


  date10    =  a10->time(::-1)       ;-- retrieve the time values and reverse it
  utc_date =  cd_calendar(date10, 0)                  ;-- convert date to UT-referenced date
  year    =  sprinti("%0.4i",tointeger(utc_date(:,0)))   ;-- get year as integer value
  mon     =  sprinti("%0.2i",tointeger(utc_date(:,1)))   ;-- get month as integer value
  day     =  sprinti("%0.2i",tointeger(utc_date(:,2)))   ;-- get day as integer value
  hours   =  sprinti("%0.2i",tointeger(utc_date(:,3)))   ;-- get day as integer value
  mins    =  sprinti("%0.2i",tointeger(utc_date(:,4)))   ;-- get day as integer value
  date_str = mon+"/"+year                          ;-- yyyy/mm

  tstart  =  1800                                 ;-- start date
  tend    =  1899                                  ;-- end date
  ind_time =  ind(where(year.ge.tstart.and.year.le.tend,True,False));-- retrieve valid indices
  time10   =  date10(ind_time)                        ;-- get dates within date interval
  data10   =  lgm_hist10(ind_time)                        ;-- get data within date interval
```

```
  labels   =  date_str(ind_time)                    ;-- get labels within date interval

  res@tmXBMode           = "Explicit"  ;-- use explicit x-axis labels
  res@tmXBValues         =  time10(::-1)       ;-- original date values
  res@tmXBLabels         =
(/"Jan","Feb","Mar","Apr","May","Jun","Jul","Aug","Sep","Oct","Nov","Dec"/)   ;-- date labels
  res@gsnDraw            = False  ; don't draw the plots, gsn_panel will draw them
  res@gsnFrame           = False  ; don't advance the frame, gsn_panel will
  res@gsnMaximize          = False
  res@trYMinF            =  1.7       ;-- min y-axis value
  res@trYMaxF            =  2.9       ;-- max y-axis value
  res@tiYAxisString       = "mean precipitation (mm/day)"
  res@tiYAxisFontHeightF   = 0.05
  res@tmXBLabelFontHeightF = 0.01       ;-- decrease font size
  res@tmXBLabelJust        = "CenterRight"
  res@tmXBLabelDeltaF      =  1.0        ;-- move x-axis labels
  res@tmXBLabelAngleF      =  50.        ;-- rotate x-axis labels
  res@tmLabelAutoStride    =  True

  res@xyLineColors              = "blue"  ;-- line colors
  res@xyLineThicknessF           =  2.0      ;-- set line thickness
  res@tmXMajorGrid               =  True     ;-- turn on x-grid
  res@tmXMajorGridThicknessF      =  1.0      ;-- thinner the lines
  res@tmXMajorGridLineDashPattern =  2        ;-- use dashed lines
  res@tmYMajorGrid               =  True     ;-- turn on y-grid
  res@tmYMajorGridThicknessF      =  1.0      ;-- thinner the lines
  res@tmYMajorGridLineDashPattern =  2        ;-- use dashed lines

  res@vpWidthF  = 1.4    ; set width of plot
  res@vpHeightF = 1.0    ; set height of plot
  res@vpXF      = 0.1    ; set left hand side start point of plot

  res@gsnStringFont = "helvetica-bold"
  res@tmXBLabelFontHeightF = 0.045
  res@tmYLLabelFontHeightF = 0.045

  res@gsnCenterString = "lgm-hist"
  res@gsnCenterStringFontHeightF = 0.055
  plot_D(1) = gsn_csm_xy(wks,time10,data10,res)

  resP              =  True
  txres             = True
  txres@txFontHeightF = 0.015
  txres@txPosYF       = 0.98       ; upper panel position
  gsn_text_ndc(wks,"Asia Ensemble Mean Timesteps From 7 GCM: A timeslice of 100
yrs",0.5,0.95,txres)

  gsn_panel(wks,plot_A,(/1,3/),res)
  gsn_panel(wks,plot_B,(/1,3/),res)
  gsn_panel(wks,plot_C,(/1,2/),res)
  gsn_panel(wks,plot_D,(/1,2/),res)
```

```
  frame(wks)
end
```