```
begin
    path = "/home4/xuxr/2/tian/trop_wmo_data/"

    path1 = "/home4/xuxr/2/tian/maxht20_ge10/"

    year = ispan(2002,2006,1)
    ny   = dimsizes(year)
    mon  = (/"06","07","08"/)
    nm   = dimsizes(mon)

    do i = 0,ny-1
      do j = 0,nm-1
        filename        =  path+year(i)+mon(j)+"_trop_lrt.nc"
        print(filename)
        f1              =  addfile(filename,"r")
        tot_tropp       =  f1->tot_tropp(:,::-1,:)
        tot_troph       =  f1->tot_troph(:,::-1,:)
        lon             =  tot_tropp&longitude
        lat             =  tot_tropp&latitude
        ; printVarSummary(lon)

        nt              =  dimsizes(tot_tropp&time)
        printVarSummary(tot_tropp)

        filename1       =  path1+year(i)+mon(j)+"_convection_case_TP_sum.hdf"
        f2              =  addfile(filename1,"r")
        lon_tp          =  f2->lon_tp
        lat_tp          =  f2->lat_tp
        ; printVarSummary(lon_tp)
        ; exit
        ntp             =  dimsizes(lat_tp)
        ;--------------------interpol----------------------
        inter_tropp     =  new((/nt,ntp/),float)
        inter_troph     =  new((/nt,ntp/),float)
        do k = 0,ntp-1
          do l = 0,nt-1
            if
(lon_tp(k).le.105).and.(lon_tp(k).ge.75).and.(lat_tp(k).le.37).and.(lat_tp(k).ge.27) then
              inter_tropp(l,k)  =  linint2_points_Wrap(lon,lat,tot_tropp(l,:,:),
False,lon_tp(k),lat_tp(k), 0)
              inter_troph(l,k)  =  linint2_points_Wrap(lon,lat,tot_troph(l,:,:),
False,lon_tp(k),lat_tp(k), 0)
            end if
            if (lon_tp(k).le.105).and.(lon_tp(k).ge.75).and.(lat_tp(k).lt.27) then
```

```
                        inter_tropp(l,k)    =    linint2_points_Wrap(lon,lat,tot_tropp(l,:,:),
False,lon_tp(k),27, 0)
                        inter_troph(l,k)    =    linint2_points_Wrap(lon,lat,tot_troph(l,:,:),
False,lon_tp(k),27, 0)
                    end if
                    if (lon_tp(k).le.105).and.(lon_tp(k).ge.75).and.(lat_tp(k).gt.37) then
                        inter_tropp(l,k)    =    linint2_points_Wrap(lon,lat,tot_tropp(l,:,:),
False,lon_tp(k),37, 0)
                        inter_troph(l,k)    =    linint2_points_Wrap(lon,lat,tot_troph(l,:,:),
False,lon_tp(k),37, 0)
                    end if
                    if (lon_tp(k).gt.105).and.(lat_tp(k).le.37).and.(lat_tp(k).ge.27) then
                        inter_tropp(l,k)    =    linint2_points_Wrap(lon,lat,tot_tropp(l,:,:),
False,105,lat_tp(k), 0)
                        inter_troph(l,k)    =    linint2_points_Wrap(lon,lat,tot_troph(l,:,:),
False,105,lat_tp(k), 0)
                    end if
                    if (lon_tp(k).lt.75).and.(lat_tp(k).le.37).and.(lat_tp(k).ge.27) then
                        inter_tropp(l,k)    =    linint2_points_Wrap(lon,lat,tot_tropp(l,:,:),
False,75,lat_tp(k), 0)
                        inter_troph(l,k)    =    linint2_points_Wrap(lon,lat,tot_troph(l,:,:),
False,75,lat_tp(k), 0)
                    end if
                end do
            end do
            inter_tropp!0       = "time"
            inter_tropp!1       = "ntp"
            inter_tropp&ntp     = ispan(1,ntp,1)
            inter_tropp&time        = tot_tropp&time

            inter_troph!0       = "time"
            inter_troph!1       = "ntp"
            inter_troph&ntp     = ispan(1,ntp,1)
            inter_troph&time        = tot_tropp&time
            printVarSummary(inter_tropp)

            ;--------------output---------------
            system("rm                                                                  -f
/home4/xuxr/2/tian/trop_wmo_data_interpol_grid/"+year(i)+mon(j)+"_trop_inter_lrt.nc")

    print("/home4/xuxr/2/tian/trop_wmo_data_interpol_grid/"+year(i)+mon(j)+"_trop_inter_lr
t.nc")
            fout                                                                        =
addfile("/home4/xuxr/2/tian/trop_wmo_data_interpol_grid/"+year(i)+mon(j)+"_trop_inter_lrt.n
```

```
c","c")
                fout->inter_tropp     =    inter_tropp
                fout->inter_troph     =    inter_troph
                fout->lat_tp          =    lat_tp
                fout->lon_tp          =    lon_tp

                delete(tot_tropp)
                delete(tot_troph)
                delete(lat_tp)
                delete(lon_tp)
                delete(inter_tropp)
                delete(inter_troph)
            end do
        end do

end


begin
        path = "/home4/xuxr/2/tian/trop_wmo_data_interpol_grid/"

        path1 = "/home4/xuxr/2/tian/maxht20_ge10/"

        year = ispan(2002,2006,1)
        ny      = dimsizes(year)
        mon    = (/"06","07","08"/)
         ; mon    = (/"06"/)
        nm      = dimsizes(mon)

        do iy = 0,ny-1
            do im = 0,nm-1
                filename        =    path+year(iy)+mon(im)+"_trop_inter_lrt.nc"
                print(filename)
                f1              =    addfile(filename,"r")          ;再分析数据:一天四
个时次(00,06,12,18)
                inter_tropp             =    f1->inter_tropp
                inter_troph             =    f1->inter_troph
                time                    =    f1->time
                utc_date        =    cd_calendar(time, 0)
                ; day          =    tointeger(utc_date(:,2))
                ; hour         =    tointeger(utc_date(:,3))
                day             =    utc_date(:,2)
                hour            =    utc_date(:,3)
                printVarSummary(inter_troph)
```

```
nt                  =   dimsizes(time)


filename1           =   path1+year(iy)+mon(im)+"_convection_case_TP_sum.hdf"
f2                  =   addfile(filename1,"r")          ;卫星数据
day_tp              =   f2->day_tp
hour_tp             =   f2->hour_tp
orbit_tp            =   f2->orbit_tp
year_tp             =   f2->year_tp
month_tp            =   f2->month_tp
elev_tp             =   f2->elev_tp
maxht20_tp          =   f2->maxht20_tp
maxht40_tp          =   f2->maxht40_tp
lat_tp              =   f2->lat_tp
lon_tp              =   f2->lon_tp

ntp             =   dimsizes(lat_tp)
;--------------------interpol----------------------
inter_tropp_time        =   new((/ntp/),float)
inter_troph_time        =   new((/ntp/),float)
do k = 0,ntp-1
    hour1 = new((/2/),float)
    aa = new((/2/),float)
    bb = new((/2/),float)
    do i = 0,nt-1,4
    ;-------------再分析 day=卫星 day（不是月末），hour<18 时----------用当天邻近的两个时次进行插值
        if ((day(i).eq.day_tp(k)).and.(hour_tp(k).lt.18)) then
            n = floattointeger(hour_tp(k)/6.0)
            print(day_tp(k)+" "+hour_tp(k))
            print(i+" "+n)
            print(day(i))
            print("k    "+k)

            ;                   indices                 =
ind((utc_date(:,2).eq.day_tp(k)).and.(utc_date(:,3).ge.hour(i+n)).and.(utc_date(:,3).le.hour(i+n+1)
))
            aa(0)   =   inter_tropp(i+n,k)
            aa(1)   =   inter_tropp(i+n+1,k)
            bb(0)   =   inter_troph(i+n,k)
            bb(1)   =   inter_troph(i+n+1,k)
            ; bb   =   inter_troph(indices,k)
            hour1(0) = hour(i+n)
            hour1(1) = hour(i+1+n)
```

```
                inter_tropp_time(k)        =        linint1_Wrap(hour1,aa(:),
False,hour_tp(k), 0)
                inter_troph_time(k)        =        linint1_Wrap(hour1,bb(:),
False,hour_tp(k), 0)
            end if
          ;----------再分析 day=卫星 day（不是月末），hour>18 时----------用当天 18
时和第二天 0 时插值
            if
((day(i).eq.day_tp(k)).and.(hour_tp(k).gt.18.and.(day_tp(k).ne.day(nt-1)))) then
                ; print(i)
                ; indices = ind((utc_date(:,2).eq.day(k)).and.(utc_date(:,3).eq.18))
                aa = new((/2/),float)
                bb = new((/2/),float)
                aa(0)   =   inter_tropp(i+3,k)
                aa(1)   =   inter_tropp(i+3+1,k)
                bb(0)   =   inter_troph(i+3,k)
                bb(1)   =   inter_troph(i+3+1,k)
                hour1(0) = 18
                hour1(1) = 24
                inter_tropp_time(k)        =        linint1_Wrap(hour1,aa(:),
False,hour_tp(k), 0)
                inter_troph_time(k)        =        linint1_Wrap(hour1,bb(:),
False,hour_tp(k), 0)
                delete([/aa,bb/])
            end if
            ;----------再分析 day=卫星 day（月末），hour>18 时----------用当天（月
末）18 时和下一个月第一天 0 时插值
            if
((day(i).eq.day_tp(k)).and.(day_tp(k).eq.day(nt-1)).and.(hour_tp(k).gt.18.)) then
                filename2                                                    =
path+year(iy+1)+mon(im)+"_trop_inter_lrt.nc"
                f3 = addfile(filename2,"r")
                inter_tropp_01                =     f3->inter_tropp
                inter_troph_01              =     f3->inter_troph
                ; ntp1              = dimsizes(inter_tropp_01(0,:))
                aa = new((/2/),float)
                bb = new((/2/),float)
                ; print(i)
                ;  indices  =  ind((utc_date(:,2).eq.day(k)).and.(utc_date(:,3).eq.18))

                aa(0)   =   inter_tropp(i+3,k)
                aa(1)   =   inter_tropp_01(0,k)
                bb(0)   =   inter_troph(i+3,k)
                bb(1)   =   inter_troph_01(0,k)
```

```
                    hour1(0) = 18
                    hour1(1) = 24
                    inter_tropp_time(k)          =          linint1_Wrap(hour1,aa(:),
False,hour_tp(k), 0)
                    inter_troph_time(k)          =          linint1_Wrap(hour1,bb(:),
False,hour_tp(k), 0)
                    delete([/aa,bb,inter_tropp_01,inter_troph_01/])
                end if
            end do
        end do
        inter_tropp_time!0          = "ntp"
        inter_tropp_time&ntp    = ispan(1,ntp,1)

        inter_troph_time!0          = "ntp"
        inter_troph_time&ntp    = ispan(1,ntp,1)
        printVarSummary(inter_tropp_time)

        ;-------------output---------------
        system("rm                                                                    -f
/home4/xuxr/2/tian/trop_wmo_data_interpol_time/"+year(iy)+mon(im)+"_trop_inter_final_lrt.n
c")

    print("/home4/xuxr/2/tian/trop_wmo_data_interpol_time/"+year(iy)+mon(im)+"_trop_inte
r_final_lrt.nc")
        fout                                                                    =
addfile("/home4/xuxr/2/tian/trop_wmo_data_interpol_time/"+year(iy)+mon(im)+"_trop_inter_f
inal_lrt.nc","c")
        fout->orbit_tp      =  orbit_tp
        fout->lat_tp        =    lat_tp
        fout->lon_tp        =    lon_tp
        fout->year_tp       =    year_tp
        fout->month_tp      =    month_tp
        fout->day_tp        =    day_tp
        fout->hour_tp       =    hour_tp
        fout->elev_tp       =    elev_tp
        fout->maxht20_tp    =    maxht20_tp
        fout->maxht40_tp    =    maxht40_tp
        fout->inter_tropp_time   =   inter_tropp_time
        fout->inter_troph_time   =   inter_troph_time



        delete(inter_tropp)
        delete(inter_troph)
```

```
                delete(lat_tp)
                delete(lon_tp)
                delete(inter_tropp_time)
                delete(inter_troph_time)

        delete([/year_tp,month_tp,day_tp,hour_tp,elev_tp,maxht20_tp,maxht40_tp,orbit_tp,time,
utc_date,day,hour/])
            end do
        end do

end
```