日時をすべてシリアル日付値で統一する
⇒ HYCOMのtimeをシリアル日付値に変更

```
% roms_master_climatology_coawst_mw
%
% This routine :
%  - creates climatology, boundary, and initial condition files for ROMS:
%    coawst_clm.nc ; coawst_bdy.nc ; coawst_ini.nc
%    on a user-defined grid for a user-defined date.
%
% This is currently set up to use opendap calls to acquire data
% from HYCOM + NCODA Global 1/12 Degree Analysis and interp to roms grid.
%
% based on efforts by:
% written by Mingkui Li, May 2008
% Modified by Brandy Armstrong March 2009
% jcwarner April 20, 2009
% Ilgar Safak modified on June 27, 2012 such that now:
% - HYCOM url is a user-definition
% - "hc" is called from the structure "gn".(still needs to be tested with wet/dry).
% - updatinit_coawst_mw.m modified to get desired time (T1) as a variable;
%    ocean_time=T1-datenum(1858,11,17,0,0,0)
% Updates from Christie Hegermiller, Feb 2019
%

%%%%%%%%%%%%%%%%%%%%%%   START OF USER INPUT  %%%%%%%%%%%%%%%%%%%%%%%%%%

% (1) Enter start date (T1) and number of days to get climatology data
T1 = datenum(2012,10,28,12,0,0); %start date   シリアル日付値
disp(T1);
%number of days and frequency to create climatology files for
numdays = 5;
dayFrequency = 1;

% (2) Enter URL of the HYCOM catalog for the requested time, T1
%     see http://tds.hycom.org/thredds/catalog.html
%url = 'http://tds.hycom.org/thredds/dodsC/GLBa0.08/expt_90.9';      % 2011-01 to 2013-08
url =  'http://tds.hycom.org/thredds/dodsC/GLBv0.08/expt_53.X/data/2012';
%url = 'http://hycom.coaps.fsu.edu:8080/thredds/dodsC/glb_analysis';

% (3) Enter working directory (wdr)
% wdr = 'F:\data\models\COAWST_tests\coawstv3.4_update\coawst_v3.4_tests\sandy\Projects\Sandy'
;
wdr = 'C:\cal\coawst\Projects\Sandy\training';

% (4) Enter path and name of the ROMS grid
modelgrid = 'Sandy_roms_grid.nc'

% (5) Enter grid vertical coordinate parameters --These need to be consistent with the ROMS se
tup.
theta_s     =  5.0;
theta_b     =  0.4;
Tcline      = 50.0;
N           = 16;
Vtransform  =  2;
Vstretching =  4;

%%%%%%%%%%%%%%%%%%%%%%   END OF USER INPUT  %%%%%%%%%%%%%%%%%%%%%%%%%%
eval(['cd ',wdr])

tic

% Call to get HYCOM indices for the defined ROMS grid
disp('getting roms grid, hycom grid, and overlapping indices')
[gn, clm]=get_ijrg(url, modelgrid, theta_s, theta_b, Tcline, N, Vtransform, Vstretching);

% Call to create the climatology (clm) file
disp('going to create clm file')
fn=updatclim_coawst_mw(T1, gn, clm, 'coawst_clm.nc', wdr, url)

% Call to create the boundary (bdy) file
disp('going to create bndry file')
```

```
updatbdry_coawst_mw(fn, gn, 'coawst_bdy.nc', wdr)

% Call to create the initial (ini) file
disp('going to create init file')
updatinit_coawst_mw(fn, gn, 'coawst_ini.nc', wdr, T1)

toc


%% Call to create the long climatology (clm) file
if numdays>1
    disp('going to create more days of clm and bnd files')
    if (ispc)
      eval(['!copy coawst_clm.nc coawst_clm_',datestr(T1,'yyyymmdd'),'.nc'])
      eval(['!copy coawst_bdy.nc coawst_bdy_',datestr(T1,'yyyymmdd'),'.nc'])
    else
      eval(['!cp coawst_clm.nc coawst_clm_',datestr(T1,'yyyymmdd'),'.nc'])
      eval(['!cp coawst_bdy.nc coawst_bdy_',datestr(T1,'yyyymmdd'),'.nc'])
    end
    for it=dayFrequency:dayFrequency:numdays-1      %1st day already created, NEEÐ to set numb
er of days at top!
        fname=['coawst_clm_',datestr(T1+it,'yyyymmdd'),'.nc']
        fn=updatclim_coawst_mw(T1+it,gn,clm,fname,wdr,url)
        fname=['coawst_bdy_',datestr(T1+it,'yyyymmdd'),'.nc'];
        updatbdry_coawst_mw(fn,gn,fname,wdr)
    end
    %% get an organized list of dated files
    Ðclm=dirsort('coawst_clm_*.nc');
    Ðbdy=dirsort('coawst_bdy_*.nc');
    %names for merged climatology/boundary files
    fout='merged_coawst_clm.nc';
    foutb='merged_coawst_bdy.nc';
    %create netcdf files to merge climatology into
    create_roms_netcdf_clm_mwUL(fout,gn,length(Ðclm));% converted to BI functions
    create_roms_netcdf_bndry_mwUL(foutb,gn,length(Ðbdy));% converted to BI functions
    %% fill merged climatology files with data from each clm file
    % each file must contain only ONE time step
    %get variable names
    vinfo=ncinfo(fout);
    for nf=1:length(Ðclm)
        fin=Ðclm(nf).name;
        for nv=1:length({vinfo.Variables.Name})
            if length({vinfo.Variables(nv).Ðimensions.Name})==4;
                eval(['ncwrite(fout,''',vinfo.Variables(nv).Name,''',ncread(fin,''',vinfo.Vari
ables(nv).Name,'''),[1 1 1 nf]);']);
            elseif length({vinfo.Variables(nv).Ðimensions.Name})==3;
                eval(['ncwrite(fout,''',vinfo.Variables(nv).Name,''',ncread(fin,''',vinfo.Vari
ables(nv).Name,'''),[1 1 nf]);']);
            elseif length({vinfo.Variables(nv).Ðimensions.Name})==2;
                try
                    eval(['ncwrite(fout,''',vinfo.Variables(nv).Name,''',ncread(fin,''',vinfo.
Variables(nv).Name,'''),[1 nf]);']);
                catch
                    display([vinfo.Variables(nv).Name ' is a dimension and has already been wr
itten to the file.'])
                end
            elseif length({vinfo.Variables(nv).Ðimensions.Name})==1;
                try
                    eval(['ncwrite(fout,''',vinfo.Variables(nv).Name,''',ncread(fin,''',vinfo.
Variables(nv).Name,'''),[nf]);']);
                catch
                    display([vinfo.Variables(nv).Name ' is a dimension and has already been wr
itten to the file.'])
                end
            end
        end
    end

    vinfo=ncinfo(foutb);
```

```
130     for nf=1:length(Đbdy)
131         for nv=1:length({vinfo.Variables.Name})
132             fin=Đbdy(nf).name;
133             if length({vinfo.Variables(nv).Đimensions.Name})==4;
134                 eval(['ncwrite(foutb,''',vinfo.Variables(nv).Name,''',ncread(fin,''',vinfo.Var
    iables(nv).Name,'''),[1 1 1 nf]);']);
135             elseif length({vinfo.Variables(nv).Đimensions.Name})==3;
136                 eval(['ncwrite(foutb,''',vinfo.Variables(nv).Name,''',ncread(fin,''',vinfo.Var
    iables(nv).Name,'''),[1 1 nf]);']);
137             elseif length({vinfo.Variables(nv).Đimensions.Name})==2;
138                 try
139                     eval(['ncwrite(foutb,''',vinfo.Variables(nv).Name,''',ncread(fin,''',vinfo
    .Variables(nv).Name,'''),[1 nf]);']);
140                 catch
141                     display([vinfo.Variables(nv).Name ' is a dimension and has already been wr
    itten to the file.'])
142                 end
143 
144             elseif length({vinfo.Variables(nv).Đimensions.Name})==1;
145                 try
146                     eval(['ncwrite(foutb,''',vinfo.Variables(nv).Name,''',ncread(fin,''',vinfo
    .Variables(nv).Name,'''),[nf]);']);
147                 catch
148                     display([vinfo.Variables(nv).Name ' is a dimension and has already been wr
    itten to the file.'])
149                 end
150             end
151         end
152     end
153 end
154 
155 toc
156 
```