Tools meeting

Ocean and atmospheric diagnostics

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IC³R

Ocean diagnostics

http://ic3.cat/wikicfu/index.php/Tools/Ocean_postprocessing

https://gitlab.cfu.local/cfu/ocean_diagnostics.git

Allows calculation of different diagnostics from monthly or daily outputs:

 indexes (sea ice volume, MOC intensity, integrated heat content),

vertical sections (meridional overturning streamfunction, temperature sections at a given latitude/longitude)

Concatenation of members and forecast times

Formatting to CFU conventions (moc_i00k_19930501.nc – moc_i00k_19930501_fc0-9_199305_199308.nc)

Ocean diagnostics

ocean_pp.bash, common_ocean_post.txt,

config_file-ocean_pp.bash

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#!/bin/bash
# This is an example of a configuration_file needed to launch ocean_pp.bash. For any other information about how to use it, you can refer to the README or the cfu wiki (http://ic3.cat/wikicfu/index.php/Tools#update_February_2013).

listpost=(  )
                 # Valid options : ('siasiesiv' 'ohc' 'moc' 'max_moc' 'area_moc' 'ext_raw_ice' (previously 'ice') 'ext_raw_oce' (previously 'sstsssmld') 'heat_sal_mxl' 'psi' 'usalc' 'lmsalc' 'uohc' 'mohc' 'lohc' 'xohc' 'ohc_speci
ed_layer' 'stc' 'vert_Tsections' 'vert_Ssections' '3dtemp' '3dsal' 'TSec_ave190-220E' 'SSec_ave190-220E' 'NAtlohc' 'xNAtlohc' 'uNAtlohc' 'mNAtlohc' 'lNAtlohc' 'NPacohc' 'xNPacohc' 'uNPacohc' 'mNPacohc' 'lNPacohc' 'TAtlohc' 'xTAtlohc' 'u
tlohc' 'mTAtlohc' 'lTAtlohc' 'TPacohc' 'xTPacohc' 'uTPacohc' 'mTPacohc' 'lTPacohc' 'TIndohc'  'xTIndohc' 'uTIndohc' 'mTIndohc' 'lTIndohc' 'Antaohc' 'xAntaohc' 'uAntaohc' 'mAntaohc' 'lAntaohc' 'Arctohc'  'xArctohc' 'uArctohc' 'mArctohc'
Arctohc' )
                 # Beware that the max_moc diagnostics can not be computed if you don't process complete years (because that's a diagnostic computed from annual means)
raw_vars_ocean=( 'default' )    # If listpost contains "ext_raw_oce" option, this is the list ocean variables you want to extract. If nothing is specified, all variables present in input file will be treated. If raw_vars_ocean='default'
sosstsst, sosaline, somixhgt and somxl010 will be extracted.
raw_vars_ice=( 'default' )      # If listpost contains "ext_raw_ice" option, this is the list of seaice variables you want to extract. If nothing is specified, all variables will be treated. If raw_vars_ice='default', isnowthi, iicethic
ileadfra, iicetemp, and ice_pres will be extracted.
expid=i00k           # expid or nemovar_s4 / nemovar_combine / glorys2v1
mod='ecearth'        # nemo / ecearth
typeoutput='MMO'     # diags / MMO
#~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
listmemb=( 0 1 2 3 4 )  # list of members
syeari=1960          # first start date, format "yyyy"
syearf=2005          # last start date, format "yyyy"
moni=11              # first month of the hindcast, format "mm", e.g. 05 for May
intsdate=1           # interval between start dates
chunklen=4           # length of the chunks (in months)
#~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
ltime0=1             # first leadtime to post-process
ltimef=4             # last leadtime to postprocess
# Fill up either ltime0/ltimef or year0/yearf
year0=               # first year to post-process in the fist start date
yearf=               # last year to post-process in the fist start date
# If you fill up the year argument, complete years will be processed, year by
# year from moni
#~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
NEMOVERSION=Ec2.3_O1L42 # NEMO version
# Valid options : Ec2.3_O1L42      for Ec-Earth 2.3 ORCA1    L42
#                 Ec3.0_O1L46      for Ec-Earth 3.0 ORCA1    L46
#                 Ec3.0_O25L46     for Ec-Earth 3.0 ORCA0.25 L46
#                 N3.2_O1L42       for Nemo      3.2 ORCA1    L42
#                 N3.3_O1L46       for Nemo      3.3 ORCA1    L42
#                 nemovar_O1L42    for Nemo      COMBINE and ORAS4 ORCA1L42
#                 === Development in progress : ===
#                 glorys2v1_O25L75 for Nemo      GLORYS2v1    ORCA025L75
#                 ucl_O2L31        for Nemo      UCL          ORCA2L31
#~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
PATHCOMMONOCEANDIAG='/home/'${USER}'/autosubmit/postp/ocean'
CON_FILES='/cfu/autosubmit/con_files'
rootout='/cfunas/exp/'${mod}'/'${expid}'/monthly_mean'

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config_file-ocean_pp.bash                                                                 1,1               A
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Atmosphere diagnostics

http://ic3.cat/wikicfu/index.php/Tools/Atmosphere_diagnostics

https://gitlab.cfu.local/cfu/atmosphere_diagnostics.git

Set of bash and nco functions used to format atmospheric monhtly and daily means

Concatenation of members and forecast times

Formatting to CFU conventions (uas_19930501.nc – uas_19930501_fc0-9_199305_199308.nc)

Atmosphere diagnostics

nccf_atm_monthly.sh, config_file-nccf_atm_monthly.bash

Ocean/Atmosphere diagnostics

Developments following Mingu's github presentations (development in development-branches from master, merge requests, opening issues...)

(http://ic3.cat/wikicfu/index.php/Computing/GitLab)

Follow bash style guide (http://ic3.cat/wikicfu/index.php/Tools/StyleGuides/BASH)