NEMS Regional_0_2 Test Report

Title	NEMS Regional_0_2 Test Report
Date	02/19/2016
Account	user: drosen project: nems
Platform	Theia Cray CS400
ESMF Version	ESMF_7_0_0
Regional Repository	● Regional: https://svnemc.ncep.noaa.gov/projects/nems/apps/Regional/tags/regional_0_2 ➢ -r 70089 (February 2016)
External Repositories	● NEMS: https://svnemc.ncep.noaa.gov/projects/nems/branches/danrosen/development ➢ -r 70086 (February 2016) ● GSM (embedded in NEMS): https://svnemc.ncep.noaa.gov/projects/gsm/branches/NUOPC/gsm57359branch ➢ -r 69235 (November 2015) ● MOM5: https://github.com/feiliuesmf/mom/branches/mom5_5_0_2_nuopc ➢ -r 5310 (November 2015) ● MOM5_CAP: https://github.com/feiliuesmf/nems_mom_cap/trunk ➢ -r 59 (February 2016) ● CICE: https://github.com/feiliuesmf/lanl_cice/trunk ➢ -r 40 (November 2015) ● CICE_CAP: https://github.com/feiliuesmf/lanl_cice_cap/trunk ➢ -r 44 (February 2016) ● LIS: https://svnemc.ncep.noaa.gov/projects/nems/external_comps/LIS/branches/nuopc ➢ -r 70071 (February 2016) ● WRFHYDRO: https://svnemc.ncep.noaa.gov/projects/nems/external_comps/WRFHYDRO/trunk/NDHMS ➢ -r 70071 (February 2016)
Model Versions	● Land Information System (LIS) Public Release 7.1r (May 2015) ● Global Spectral Model R65011 (November 2015) ● Modular Ocean Model 5.0 (2012) ● The Los Alamos sea ice model 5.0.2 (September 2013) ● LIS 7.1r / Noah 3.3 (February 2016) ● WRF-Hydro 3.0+ Dev (July 2015)
Build Environment	● COMPONENTS=("GSM" "MOM5" "CICE" "WRFHYDRO" "LIS") ● NEMS_GRID=T126_nx1 ● MOM5_SRCDIR=$ROOTDIR/MOM5 ● MOM5_BINDIR=$ROOTDIR/MOM5-INSTALL ● CICE_SRCDIR=$ROOTDIR/CICE ● CICE_BINDIR=$ROOTDIR/CICE-INSTALL ● WRFHYDRO_SRCDIR=$ROOTDIR/WRFHYDRO ● WRFHYDRO_BINDIR=$ROOTDIR/WRFHYDRO-INSTALL ● LIS_SRCDIR=$ROOTDIR/LIS ● LIS_BINDIR=$ROOTDIR/LIS-INSTALL ● source /etc/profile ● module load intel impi netcdf ○ Intel: 14.0.2 ○ Intel MPI: 4.1.3.048 ○ NetCDF: 4.3.0 ● module use /scratch4/NCEPDEV/nems/save/Gerhard.Theurich/Modulefiles ● module load esmf/7.0.0
NEMS Build Command	NEMS/NEMSAppBuilder

NEMS Compset	2009_nems_gsm_lis_cice_mom5_wrfhydro

```
##################################################################################
#                  CICE
#                    | 1h
# TEST   - GSM <-> Mediator <-> MOM5
#       -     1h   |    |  2h    coupling interval
#       -       1h |    | 1h
#       -         LIS  WRFHYDRO
#       - Starting at 2009120100, running for 4 hours
#
##################################################################################

export TEST_DESCR="NUOPC: GSM <-1h-> MED <-1h-> LIS <-1h-> MED <-1h-> CICE <-1h-> MED <-1h->
WRFHYDRO <-1h-> MED <-2h-> MOM5...4 hours"

# - gsm configuration ---
export_gsm
export TASKS=110
export WLCLK=30
export CDATE=2009120100
#export NDAYS=1
export NHRS=4
export wave=126 ; export lm=64 ; export lsoil=4
export CPLFLX=.true.
export A2OI_OUT=.false.
export FHZER=1
export FHOUT=1
export NEMS_GRID='T126_nx1'

# - nems.configure ---
export_nems
export nems_configure=med_atm_lnd_ice_ocn_hyd
export med_model=nems
export med_petlist_bounds="0 5"       #06
export atm_model=gsm
export atm_petlist_bounds="6 37"      #32
export ocn_model=mom5
export ocn_petlist_bounds="38 61"     #24
export ice_model=cice
export ice_petlist_bounds="62 65"     #04
export lnd_model=lis
export lnd_petlist_bounds="66 77"     #12
export hyd_model=wrfhydro
export hyd_petlist_bounds="78 109"    #32
export coupling_interval_slow_sec=7200.0
export coupling_interval_fast_sec=3600.0

# - component specific setup calls ---
setup_cice
setup_mom5
setup_2009_wrfhydro
setup_2009_lis_t126

# -
RUN_SCRIPT=rt_gfs.sh

# - validation
export CNTL_DIR=2009_nems_gsm_cice_mom5
export LIST_FILES=" \
 sigf00 sigf01 sigf02 sigf04 sigf06 sigf12 sigf24     \
 sfcf00 sfcf01 sfcf02 sfcf04 sfcf06 sfcf12 sfcf24     \
 flxf00 flxf01 flxf02 flxf04 flxf06 flxf12 flxf24     "
LIST_FILES+=" \
 field_atm_export_inst_down_lw_flx.nc                 \
 field_atm_export_inst_down_sw_flx.nc                 \
 field_atm_export_inst_down_sw_ir_dif_flx.nc          \
 field_atm_export_inst_down_sw_ir_dir_flx.nc          \
 field_atm_export_inst_down_sw_vis_dif_flx.nc         \
 field_atm_export_inst_down_sw_vis_dir_flx.nc         \
```

```
  field_atm_export_inst_laten_heat_flx.nc            \
  field_atm_export_inst_merid_moment_flx.nc          \
  field_atm_export_inst_merid_wind_height10m.nc      \
  field_atm_export_inst_net_lw_flx.nc                \
  field_atm_export_inst_net_sw_flx.nc                \
  field_atm_export_inst_net_sw_ir_dif_flx.nc         \
  field_atm_export_inst_net_sw_ir_dir_flx.nc         \
  field_atm_export_inst_net_sw_vis_dif_flx.nc        \
  field_atm_export_inst_net_sw_vis_dir_flx.nc        \
  field_atm_export_inst_pres_height_surface.nc       \
  field_atm_export_inst_sensi_heat_flx.nc            \
  field_atm_export_inst_spec_humid_height2m.nc       \
  field_atm_export_inst_surface_height.nc            \
  field_atm_export_inst_temp_height2m.nc             \
  field_atm_export_inst_temp_height_surface.nc       \
  field_atm_export_inst_zonal_moment_flx.nc          \
  field_atm_export_inst_zonal_wind_height10m.nc      \
  field_atm_export_mean_down_lw_flx.nc               \
  field_atm_export_mean_down_sw_flx.nc               \
  field_atm_export_mean_down_sw_ir_dif_flx.nc        \
  field_atm_export_mean_down_sw_ir_dir_flx.nc        \
  field_atm_export_mean_down_sw_vis_dif_flx.nc       \
  field_atm_export_mean_down_sw_vis_dir_flx.nc       \
  field_atm_export_mean_laten_heat_flx.nc            \
  field_atm_export_mean_merid_moment_flx.nc          \
  field_atm_export_mean_net_lw_flx.nc                \
  field_atm_export_mean_net_sw_flx.nc                \
  field_atm_export_mean_net_sw_ir_dif_flx.nc         \
  field_atm_export_mean_net_sw_ir_dir_flx.nc         \
  field_atm_export_mean_net_sw_vis_dif_flx.nc        \
  field_atm_export_mean_net_sw_vis_dir_flx.nc        \
  field_atm_export_mean_prec_rate.nc                 \
  field_atm_export_mean_sensi_heat_flx.nc            \
  field_atm_export_mean_zonal_moment_flx.nc          \
  field_atm_export_inst_merid_wind_height_lowest.nc  \
  field_atm_export_inst_pres_height_lowest.nc        \
  field_atm_export_inst_spec_humid_height_lowest.nc  \
  field_atm_export_inst_temp_height_lowest.nc        \
  field_atm_export_inst_zonal_wind_height_lowest.nc  "
LIST_FILES+=" \
  field_atm_import_ice_fraction.nc                   \
  field_atm_import_inst_ice_ir_dif_albedo.nc         \
  field_atm_import_inst_ice_ir_dir_albedo.nc         \
  field_atm_import_inst_ice_vis_dif_albedo.nc        \
  field_atm_import_inst_ice_vis_dir_albedo.nc        \
  field_atm_import_land_mask.nc                      \
  field_atm_import_mean_evap_rate_atm_into_ice.nc    \
  field_atm_import_mean_laten_heat_flx_atm_into_ice.nc \
  field_atm_import_mean_sensi_heat_flx_atm_into_ice.nc \
  field_atm_import_mean_up_lw_flx_ice.nc             \
  field_atm_import_sea_surface_temperature.nc        \
  field_atm_import_stress_on_air_ice_merid.nc        \
  field_atm_import_stress_on_air_ice_zonal.nc        "
LIST_FILES+=" \
  field_ice_export_ice_fraction.nc                   \
  field_ice_export_ice_mask.nc                       \
  field_ice_export_inst_ice_ir_dif_albedo.nc         \
  field_ice_export_inst_ice_ir_dir_albedo.nc         \
  field_ice_export_inst_ice_vis_dif_albedo.nc        \
  field_ice_export_inst_ice_vis_dir_albedo.nc        \
  field_ice_export_mean_evap_rate_atm_into_ice.nc    \
  field_ice_export_mean_laten_heat_flx_atm_into_ice.nc \
  field_ice_export_mean_sensi_heat_flx_atm_into_ice.nc \
  field_ice_export_mean_sw_pen_to_ocn.nc             \
  field_ice_export_mean_up_lw_flx_ice.nc             \
  field_ice_export_sea_ice_temperature.nc            \
  field_ice_export_stress_on_air_ice_merid.nc        \
  field_ice_export_stress_on_air_ice_zonal.nc        \
  field_ice_export_stress_on_ocn_ice_merid.nc        \
  field_ice_export_stress_on_ocn_ice_zonal.nc        "
LIST_FILES+=" \
```

```
 field_ice_import_air_density_height_lowest.nc        \
 field_ice_import_freezing_melting_potential.nc       \
 field_ice_import_inst_merid_wind_height_lowest.nc    \
 field_ice_import_inst_pres_height_lowest.nc          \
 field_ice_import_inst_spec_humid_height_lowest.nc    \
 field_ice_import_inst_temp_height_lowest.nc          \
 field_ice_import_inst_zonal_wind_height_lowest.nc    \
 field_ice_import_mean_down_lw_flx.nc                 \
 field_ice_import_mean_down_sw_ir_dif_flx.nc          \
 field_ice_import_mean_down_sw_ir_dir_flx.nc          \
 field_ice_import_mean_down_sw_vis_dif_flx.nc         \
 field_ice_import_mean_down_sw_vis_dir_flx.nc         \
 field_ice_import_mean_fprec_rate.nc                  \
 field_ice_import_mean_prec_rate.nc                   \
 field_ice_import_mixed_layer_depth.nc                \
 field_ice_import_ocn_current_merid.nc                \
 field_ice_import_ocn_current_zonal.nc                \
 field_ice_import_sea_surface_slope_merid.nc          \
 field_ice_import_sea_surface_slope_zonal.nc          \
 field_ice_import_sea_surface_temperature.nc          \
 field_ice_import_s_surf.nc                           "
LIST_FILES+=" \
 field_med_atm_a_land_mask.nc                         \
 field_med_ice_a_ice_mask.nc                          \
 field_med_ocn_a_ocean_mask.nc                        "
#LIST_FILES+=" \
# field_med_from_atm_inst_down_lw_flx.nc             \
# field_med_from_atm_inst_down_sw_flx.nc             \
# field_med_from_atm_inst_down_sw_ir_dif_flx.nc      \
# field_med_from_atm_inst_down_sw_ir_dir_flx.nc      \
# field_med_from_atm_inst_down_sw_vis_dif_flx.nc     \
# field_med_from_atm_inst_down_sw_vis_dir_flx.nc     \
# field_med_from_atm_inst_laten_heat_flx.nc          \
# field_med_from_atm_inst_merid_moment_flx.nc        \
# field_med_from_atm_inst_merid_wind_height10m.nc    \
# field_med_from_atm_inst_net_lw_flx.nc              \
# field_med_from_atm_inst_net_sw_flx.nc              \
# field_med_from_atm_inst_net_sw_ir_dif_flx.nc       \
# field_med_from_atm_inst_net_sw_ir_dir_flx.nc       \
# field_med_from_atm_inst_net_sw_vis_dif_flx.nc      \
# field_med_from_atm_inst_net_sw_vis_dir_flx.nc      \
# field_med_from_atm_inst_pres_height_surface.nc     \
# field_med_from_atm_inst_sensi_heat_flx.nc          \
# field_med_from_atm_inst_spec_humid_height2m.nc     \
# field_med_from_atm_inst_surface_height.nc          \
# field_med_from_atm_inst_temp_height2m.nc           \
# field_med_from_atm_inst_temp_height_surface.nc     \
# field_med_from_atm_inst_zonal_moment_flx.nc        \
# field_med_from_atm_inst_zonal_wind_height10m.nc    \
# field_med_from_atm_mean_down_lw_flx.nc             \
# field_med_from_atm_mean_down_sw_flx.nc             \
# field_med_from_atm_mean_down_sw_ir_dif_flx.nc      \
# field_med_from_atm_mean_down_sw_ir_dir_flx.nc      \
# field_med_from_atm_mean_down_sw_vis_dif_flx.nc     \
# field_med_from_atm_mean_down_sw_vis_dir_flx.nc     \
# field_med_from_atm_mean_laten_heat_flx.nc          \
# field_med_from_atm_mean_merid_moment_flx.nc        \
# field_med_from_atm_mean_net_lw_flx.nc              \
# field_med_from_atm_mean_net_sw_flx.nc              \
# field_med_from_atm_mean_net_sw_ir_dif_flx.nc       \
# field_med_from_atm_mean_net_sw_ir_dir_flx.nc       \
# field_med_from_atm_mean_net_sw_vis_dif_flx.nc      \
# field_med_from_atm_mean_net_sw_vis_dir_flx.nc      \
# field_med_from_atm_mean_prec_rate.nc               \
# field_med_from_atm_mean_sensi_heat_flx.nc          \
# field_med_from_atm_mean_zonal_moment_flx.nc        \
# field_med_from_atm_inst_merid_wind_height_lowest.nc \
# field_med_from_atm_inst_pres_height_lowest.nc      \
# field_med_from_atm_inst_spec_humid_height_lowest.nc \
# field_med_from_atm_inst_temp_height_lowest.nc      \
# field_med_from_atm_inst_zonal_wind_height_lowest.nc \
```

```
# field_med_from_ice_ice_fraction.nc                    \
# field_med_from_ice_inst_ice_ir_dif_albedo.nc          \
# field_med_from_ice_inst_ice_ir_dir_albedo.nc          \
# field_med_from_ice_inst_ice_vis_dif_albedo.nc         \
# field_med_from_ice_inst_ice_vis_dir_albedo.nc         \
# field_med_from_ice_mean_evap_rate_atm_into_ice.nc     \
# field_med_from_ice_mean_laten_heat_flx_atm_into_ice.nc \
# field_med_from_ice_mean_sensi_heat_flx_atm_into_ice.nc \
# field_med_from_ice_mean_sw_pen_to_ocn.nc              \
# field_med_from_ice_mean_up_lw_flx_ice.nc              \
# field_med_from_ice_sea_ice_temperature.nc             \
# field_med_from_ice_stress_on_air_ice_merid.nc         \
# field_med_from_ice_stress_on_air_ice_zonal.nc         \
# field_med_from_ice_stress_on_ocn_ice_merid.nc         \
# field_med_from_ice_stress_on_ocn_ice_zonal.nc         \
# field_med_from_ocn_ocean_mask.nc                      \
# field_med_from_ocn_ocn_current_merid.nc               \
# field_med_from_ocn_ocn_current_zonal.nc               \
# field_med_from_ocn_sea_lev.nc                         \
# field_med_from_ocn_sea_surface_temperature.nc         \
# field_med_from_ocn_s_surf.nc                          \
# field_med_to_atm_ice_fraction.nc                      \
# field_med_to_atm_inst_ice_ir_dif_albedo.nc            \
# field_med_to_atm_inst_ice_ir_dir_albedo.nc            \
# field_med_to_atm_inst_ice_vis_dif_albedo.nc           \
# field_med_to_atm_inst_ice_vis_dir_albedo.nc           \
# field_med_to_atm_land_mask.nc                         \
# field_med_to_atm_mean_evap_rate_atm_into_ice.nc       \
# field_med_to_atm_mean_laten_heat_flx_atm_into_ice.nc \
# field_med_to_atm_mean_sensi_heat_flx_atm_into_ice.nc \
# field_med_to_atm_mean_up_lw_flx_ice.nc                \
# field_med_to_atm_sea_surface_temperature.nc           \
# field_med_to_atm_stress_on_air_ice_merid.nc           \
# field_med_to_atm_stress_on_air_ice_zonal.nc           \
# field_med_to_ice_air_density_height_lowest.nc         \
# field_med_to_ice_freezing_melting_potential.nc        \
# field_med_to_ice_inst_merid_wind_height_lowest.nc     \
# field_med_to_ice_inst_pres_height_lowest.nc           \
# field_med_to_ice_inst_spec_humid_height_lowest.nc     \
# field_med_to_ice_inst_temp_height_lowest.nc           \
# field_med_to_ice_inst_zonal_wind_height_lowest.nc     \
# field_med_to_ice_mean_down_lw_flx.nc                  \
# field_med_to_ice_mean_down_sw_ir_dif_flx.nc           \
# field_med_to_ice_mean_down_sw_ir_dir_flx.nc           \
# field_med_to_ice_mean_down_sw_vis_dif_flx.nc          \
# field_med_to_ice_mean_down_sw_vis_dir_flx.nc          \
# field_med_to_ice_mean_fprec_rate.nc                   \
# field_med_to_ice_mean_prec_rate.nc                    \
# field_med_to_ice_mixed_layer_depth.nc                 \
# field_med_to_ice_ocn_current_merid.nc                 \
# field_med_to_ice_ocn_current_zonal.nc                 \
# field_med_to_ice_sea_surface_slope_merid.nc           \
# field_med_to_ice_sea_surface_slope_zonal.nc           \
# field_med_to_ice_sea_surface_temperature.nc           \
# field_med_to_ice_s_surf.nc                            \
# field_med_to_ocn_inst_pres_height_surface.nc          \
# field_med_to_ocn_mean_evap_rate.nc                    \
# field_med_to_ocn_mean_fprec_rate.nc                   \
# field_med_to_ocn_mean_merid_moment_flx.nc             \
# field_med_to_ocn_mean_net_lw_flx.nc                   \
# field_med_to_ocn_mean_net_sw_ir_dif_flx.nc            \
# field_med_to_ocn_mean_net_sw_ir_dir_flx.nc            \
# field_med_to_ocn_mean_net_sw_vis_dif_flx.nc           \
# field_med_to_ocn_mean_net_sw_vis_dir_flx.nc           \
# field_med_to_ocn_mean_prec_rate.nc                    \
# field_med_to_ocn_mean_sensi_heat_flx.nc               \
# field_med_to_ocn_mean_zonal_moment_flx.nc             "
LIST_FILES+=" \
 field_ocn_export_ocean_mask.nc                         \
 field_ocn_export_ocn_current_merid.nc                  \
 field_ocn_export_ocn_current_zonal.nc                  \
```

```
 field_ocn_export_sea_lev.nc                        \
 field_ocn_export_sea_surface_temperature.nc         \
 field_ocn_export_s_surf.nc                          "
LIST_FILES+=" \
 field_ocn_import_inst_pres_height_surface.nc        \
 field_ocn_import_mean_evap_rate.nc                  \
 field_ocn_import_mean_fprec_rate.nc                 \
 field_ocn_import_mean_merid_moment_flx.nc           \
 field_ocn_import_mean_net_lw_flx.nc                 \
 field_ocn_import_mean_net_sw_ir_dif_flx.nc          \
 field_ocn_import_mean_net_sw_ir_dir_flx.nc          \
 field_ocn_import_mean_net_sw_vis_dif_flx.nc         \
 field_ocn_import_mean_net_sw_vis_dir_flx.nc         \
 field_ocn_import_mean_prec_rate.nc                  \
 field_ocn_import_mean_sensi_heat_flx.nc             \
 field_ocn_import_mean_zonal_moment_flx.nc           "
LIST_FILES+=" \
 array_gsm_grid_coord1.nc                            \
 array_gsm_grid_coord2.nc                            \
 array_med_atm_grid_area.nc                          \
 array_med_atm_grid_coord1.nc                        \
 array_med_atm_grid_coord2.nc                        \
 array_med_atm_grid_corner1.nc                       \
 array_med_atm_grid_corner2.nc                       \
 array_med_atm_grid_mask.nc                          \
 array_med_ice_grid_area.nc                          \
 array_med_ice_grid_coord1.nc                        \
 array_med_ice_grid_coord2.nc                        \
 array_med_ice_grid_corner1.nc                       \
 array_med_ice_grid_corner2.nc                       \
 array_med_ice_grid_mask.nc                          \
 array_med_med_grid_coord1.nc                        \
 array_med_med_grid_coord2.nc                        \
 array_med_med_grid_corner1.nc                       \
 array_med_med_grid_corner2.nc                       \
 array_med_ocn_grid_area.nc                          \
 array_med_ocn_grid_coord1.nc                        \
 array_med_ocn_grid_coord2.nc                        \
 array_med_ocn_grid_corner1.nc                       \
 array_med_ocn_grid_corner2.nc                       \
 array_med_ocn_grid_mask.nc                          \
 array_med_a2o_weights_bilnr.nc                      \
 array_med_a2o_weights_consv.nc                      \
 array_med_a2o_weights_patch.nc                      \
 array_med_o2a_weights_bilnr.nc                      \
 array_med_o2a_weights_consv.nc                      \
 array_med_o2a_weights_patch.nc                      "
```

NEMS Configuration

nems.configure.lnd.IN

```
##############################################
####  NEMS Run-Time Configuration File  #####
##############################################

# EARTH #
EARTH_component_list: MED ATM LND ICE OCN HYD
EARTH_attributes::
  Verbosity = max
::

# MED #
MED_model:                      _med_model_
MED_petlist_bounds:             _med_petlist_bounds_
MED_attributes::
  Verbosity = max
  DumpFields = true
  DumpRHs = false
```

```
::

# ATM #
ATM_model:                  _atm_model_
ATM_petlist_bounds:             _atm_petlist_bounds_
ATM_attributes::
  Verbosity = max
::

# LND #
LND_model:                  _lnd_model_
LND_petlist_bounds:             _lnd_petlist_bounds_
LND_attributes::
  Verbosity = max
::

# ICE #
ICE_model:                  _ice_model_
ICE_petlist_bounds:             _ice_petlist_bounds_
ICE_attributes::
  Verbosity = max
::

# OCN #
OCN_model:                  _ocn_model_
OCN_petlist_bounds:             _ocn_petlist_bounds_
OCN_attributes::
  Verbosity = max
::

# HYD #
HYD_model:                  _hyd_model_
HYD_petlist_bounds:             _hyd_petlist_bounds_
HYD_attributes::
  Verbosity = max
::

# Run Sequence #
runSeq::
  @_coupling_interval_slow_sec_
    OCN -> MED :remapMethod=redist
    MED MedPhase_slow
    MED -> OCN :remapMethod=redist
    OCN
    @_coupling_interval_fast_sec_
      MED MedPhase_fast_before
      MED -> ATM :remapMethod=redist
      MED -> ICE :remapMethod=redist
      MED -> LND :remapMethod=redist
      MED -> HYD :remapMethod=redist
      ATM
      ICE
      LND
      HYD
      ATM -> MED :remapMethod=redist
      ICE -> MED :remapMethod=redist
      LND -> MED :remapMethod=redist
      HYD -> MED :remapMethod=redist
      MED MedPhase_fast_after
    @
  @
::
```

Runtime Data Files	• CICE: /scratch4/NCEPDEV/nems/noscrub/Anthony.Craig/lanl_cice_data/nx1/ • MOM5: /scratch4/NCEPDEV/nems/noscrub/Anthony.Craig/mom_data/nx1/INPUT/ • WRFHYDRO: /scratch4/NCEPDEV/nems/noscrub/Daniel.Rosen/2009_wrfhydro/ • LIS: /scratch4/NCEPDEV/nems/noscrub/Daniel.Rosen/2009_lis_t126/
Run Directory	/scratch3/NCEPDEV/stmp1/Daniel.Rosen/rt_regional_0_2/2009_nems_gsm_lis_cice_mom5_wrfhydro

Validation

/scratch3/NCEPDEV/stmp1/Daniel.Rosen/NEMS-VALIDATION/regional_0_2

Connector Redistribution

Numerically validated by comparing mediator field array to component field array using ncdiff.

```
field_med_from_atm_inst_down_lw_flx.nc.field_atm_export_inst_down_lw_flx.nc.ncdiff
 min:  inst_down_lw_flx = 0 ;
 max:  inst_down_lw_flx = 0 ;
field_med_from_atm_mean_prec_rate.nc.field_atm_export_mean_prec_rate.nc.ncdiff
 min:  mean_prec_rate = 0 ;
 max:  mean_prec_rate = 0 ;
field_med_from_lnd_mean_laten_heat_flx_atm_into_lnd.nc.field_lis_export_mean_laten_heat_flx_atm_into_lnd.nc.
ncdiff
 min:  mean_laten_heat_flx_atm_into_lnd = 0 ;
 max:  mean_laten_heat_flx_atm_into_lnd = 0 ;
field_med_from_lnd_temperature_of_soil_layer_1.nc.field_lis_export_temperature_of_soil_layer_1.nc.ncdiff
 min:  temperature_of_soil_layer_1 = 0 ;
 max:  temperature_of_soil_layer_1 = 0 ;
field_med_from_hyd_liquid_water_content_of_soil_layer_1.nc.field_wrfhydro_export_liquid_water_content_of_soil_
layer_1.nc.ncdiff
 min:  liquid_water_content_of_soil_layer_1 = 0 ;
 max:  liquid_water_content_of_soil_layer_1 = 0 ;
field_med_to_hyd_temperature_of_soil_layer_1.nc.field_wrfhydro_import_temperature_of_soil_layer_1.nc.ncdiff
 min:  temperature_of_soil_layer_1 = 0 ;
 max:  temperature_of_soil_layer_1 = 0 ;
field_med_to_lnd_liquid_water_content_of_soil_layer_1.nc.field_lis_import_liquid_water_content_of_soil_layer_1.n
c.ncdiff
 min:  liquid_water_content_of_soil_layer_1 = 0 ;
 max:  liquid_water_content_of_soil_layer_1 = 0 ;
field_med_to_lnd_mean_prec_rate.nc.field_lis_import_mean_prec_rate.nc.ncdiff
 min:  mean_prec_rate = 0 ;
 max:  mean_prec_rate = 0 ;
field_med_to_hyd_inst_down_lw_flx.nc.field_wrfhydro_import_inst_down_lw_flx.nc.ncdiff
 min:  inst_down_lw_flx = 0 ;
 max:  inst_down_lw_flx = 0 ;
```

NEMS Mediator Regridding

Visually validated using ferret.

Regrid	Field	Source Grid	Destination Grid	Status
GSM -> LIS	mean_prec_rate	GSM T126 Grid	LIS T126 Grid	visually verified
GSM -> WRFHYDRO	inst_down_lw_flx	GSM T126 Grid	Front Range Regional Grid	visually verified
LIS -> GSM	mean_laten_heat_flx	LIS T126 Grid	GSM T126 Grid	visually verified
LIS -> WRFHYDRO	temperature_of_soil_layer_1	LIS T126 Grid	Front Range Regional Grid	visually verified
WRFHYDRO -> LIS	liquid_water_content_of_soil_layer_1	Front Range Regional Grid	LIS T126 Grid	visually verified
WRFHYDRO -> GSM	liquid_water_content_of_soil_layer_1	Front Range Regional Grid	GSM T126 Grid	visually verified

See NEMS Milestone Revisions:

- R70089: Regional 0.2: http://cog-esgf.esrl.noaa.gov/projects/couplednems/regional02