ARPEGE MEMORANDUM

From: GCO Date: February 05, 2009

To: GMAP, COMPAS, GMGEC, GMME, DIR/RE/CRC, Mats Hamrud

Subject: New cycle CY35T2

A new cycle CY35T2 has been created. This is not a common cycle with the ECMWF. The different contributions for this cycle are described in the following pages.

ClearCase label: CY35T2

Modified libraries: arpege (ifs), aladin, xrd (ifsaux), mpa, mse, odb, utilities, xla (algor), bla (bl), trans, sct (scat)

Contributors:

ALIAS Antoinette	Project:arpege	CCase branch:mrga589_CY35T1_gco
BOUYSSEL Francois	Project:arpege	CCase branch:mrpa649_CY35T1_dblsfx1
BROZKOVA Radmila	Project:arpege	CCase branch:mrpe684_CY35T1_lentch
DESROZIERS Gerald	Project:arpege	CCase branch:mrpm611_CY35T1_femars
EL KHATIB Ryad	Project:arpege	CCase branch:mrpm602_CY35T1_bffpos
	Project:arpege	CCase branch:mrpm602_CY35T1_save2gfs
GCO	Project:arpege	CCase branch:marp001_CY33T1_op1isp
	Project:arpege	CCase branch:marp001_CY35T1_fix
	Project:arpege	CCase branch:marp001_CY35T1_fixlentch
	Project:arpege	CCase branch:marp001_CY35T1_fixtke
	Project:arpege	CCase branch:marp001_CY35T1_remove
	Project:arpege	CCase branch:marp001_CY35T1_t2fix
GRIL Jean-Daniel	Project:arpege	CCase branch:mrpe604_CY35T1_pinutslmrt
HIRLAM Consortium	Project:arpege	CCase branch:mrpm636_CY35T1_hirlam
KARBOU Fatima	Project:arpege	CCase branch:mrpa681_CY35T1_EMIS_GLACE
PAYAN Christophe	Project:arpege	CCase branch:mrpa642_CY35T1_t2_thinpruning
	Project:arpege	CCase branch:mrpa642_CY35T1_ventneutre_etc...
PIRIOU Jean-Marcel	Project:arpege	CCase branch:marp001_CY35T1_jmp_ppfidh
	Project:arpege	CCase branch:mrpm606_CY35T1_ddhindices
RIVIERE Olivier	Project:arpege	CCase branch:mrpe601_CY35T1_ddh_etc...
SEITY Yann	Project:arpege	CCase branch:mrpm637_CY35T1_arome
	Project:arpege	CCase branch:mrpm637_CY35T1_bfssurfex
TAILLEFER Francoise	Project:arpege	CCase branch:mrpa647_CY35T1_net
TERMONIA Piet	Project:arpege	CCase branch:mrpm616_CY35T1_ssdfi
VANA Filip	Project:arpege	CCase branch:mrpe706_CY35T1_801
	Project:arpege	CCase branch:mrpe706_CY35T1_slhdfor35t2

	Project:arpege	CCase branch:mrpe706_CY35T1_turb
WATTRELOT Eric	Project:arpege	CCase branch:mrpa652_CY35T1_cy35t1bt2_ew
YESSAD Karim	Project:arpege	CCase branch:mrpm603_CY35T1_dev35t1pour35t2

ALIAS Antoinette

Doc:

Modifications to run ARPEGE calling SURFEX , reading and writing SURFEX files in FA format.

Project: Meso-NH physique altitude,Meso-NH surface
ClearCase branch: mrga589_CY35T1_gco

Modified:

mpa/micro/module	modd_parameters.mnh		
mse/externals	aro_surf_diag.mnh	aroini_surf.mnh	
mse/internals	aroend_io_surf_n.mnh	aroinit_io_surf_n.mnh	coupling_seaflux_n.mnh
	end_io_surf_fa_n.mnh	error_read_surf_fa.mnh	init_io_surf_fa_n.mnh
	init_io_surf_n.mnh	open_file_fa.mnh	read_surfc0_aro.mnh
	read_surfl0_aro.mnh	read_surfl1_aro.mnh	read_surfn0_aro.mnh
	read_surfn1_aro.mnh	read_surft0_aro.mnh	read_surfx0_aro.mnh
	read_surfx1_aro.mnh	read_surfx1_fa.mnh	read_surfx2_aro.mnh
	read_surfx2_fa.mnh	write_header_fa.mnh	write_surfc0_aro.mnh
	write_surfc0_fa.mnh	write_surfl0_aro.mnh	write_surfl0_fa.mnh
	write_surfl1_aro.mnh	write_surfl1_fa.mnh	write_surfn0_aro.mnh
	write_surfn0_fa.mnh	write_surfn1_aro.mnh	write_surfn1_fa.mnh
	write_surft0_aro.mnh	write_surft0_fa.mnh	write_surft2_fa.mnh
	write_surfx0_aro.mnh	write_surfx0_fa.mnh	write_surfx1_aro.mnh
	write_surfx1_fa.mnh	write_surfx2_aro.mnh	write_surfx2_fa.mnh
mse/module	modd_io_surf_fa.mnh	modi_init_io_surf_fa_n.mnh	

BOUYSSEL Francois

Doc:

1) Bugs correction related with SURFEX use in ALADIN:
- initialization of Wpi in PREP_SURFEX,
- inquiry mode of roughness lengths (Z0, Z0h),
- creation of PGD executable with gmkpack.

2) Bug correction in the setup of the entrainment namelist parameter used in the "CAPE fullpos" computation.

3) Bugs correction in the algorithm for negative humidities correction.

Project: arpege,Meso-NH surface
ClearCase branch: mrpa649_CY35T1_dblsfx1

Modified:

arp/adiab	cpg_gp.F90		
arp/fullpos	fpcincape.F90	sufpc.F90	
arp/module	yomfpc.F90		
arp/namelist	namfpc.h		
arp/phys_dmn	acdifv1.F90	acdifv2.F90	aplpar.F90
	qngcor.F90		
arp/setup	su0phy.F90		
mse/dummy	read_netcdf.mnh		
mse/externals	aro_ground_diag.mnh		
mse/internals	get_surf_var_n.mnh	get_var_nature_n.mnh	get_var_sea_n.mnh
	get_var_water_n.mnh		
mse/module	mode_read_buffer.mnh	modi_get_surf_var_n.mnh	modi_get_var_nature_n.mnh
	modi_get_var_sea_n.mnh	modi_get_var_town_n.mnh	modi_get_var_water_n.mnh

---

BROZKOVA Radmila

Doc:

Bugfixes in historic entrainment option LENTCH:

arp/module/yomphy0.F90
Tuning constants for LENTCH;

arp/namelist/namphy0.h
Tuning constants for LENTCH;

arp/setup/su0phy.F90
Consistency check of LENTCH and prognostic convection;

arp/phys_dmn/suphy0.F90
Default values and prints of LENTCH tuning constants;

arp/phys_dmn/mf_phys.F90
Bug correction: if not advected, YUEN (historic entrainment GFL) should be copied to T1 of GFL.

arp/phys_dmn/accvud.F90
Cleaning and corrections of LENTCH code.

Project: arpege
ClearCase branch: mrpe684_CY35T1_lentch

Modified:

arp/module	yomphy0.F90		
arp/namelist	namphy0.h		
arp/phys_dmn	accvud.F90	mf_phys.F90	suphy0.F90
arp/setup	su0phy.F90		

DESROZIERS Gerald

Doc:

The branch allows the writing of ARPEGE data assimilation ensemble files in GRIB format (under CONF=1).
This is activated by the namelist parameter LFEMARSF added in namelist namvar (an ensemble file is read and written in GRIB format if LFEMARSF=.TRUE.).
Another namelist parameter LFEMARSD has been added, which allows the reading of 2 ensemble files and the writing of their difference in GRIB format.

Project: arpege
ClearCase branch: mrpm611_CY35T1_femars

Added:

arp/var grbspa.F90

Modified:

arp/control cnt3.F90
arp/module yomvar.F90
arp/namelist namvar.h
arp/var grbspa.F90 suvar.F90

EL KHATIB Ryad

Doc:
Project: arpege
ClearCase branch: mrpm602_CY35T1_bffpos

Modified:

arp/fullpos wrhfp.F90
arp/setup supp.F90
arp/utility pkspeca.F90

Doc:

The purpose of this modset is to enable the files produced along a forecast job to be written out on a specific target directory rather that the working
directory of the job itself. That way, a parallel job can be run on (faster) local disks while the output files are written to a global file system,
making them available as soon as they are produced, for another parallel post-processing task.
The files concerned are : the historical files (ICMSH), the post-processing files (PF*) and the DDH files (DH*).*
Going further with this idea, the coupling files needed to run a limited area model can be fetched as well from a specific source directory.
Namelist parameters involved :
- CFPATH in NAMCT0 is now a directory name which must finish with a "/" : this is the target directory for historical, post-processing and DDH files.

- new variable CEFNLSH in NAMOPH is the coupling files names, less the time stamp (default is 'ELSCF'//CNMEXP(1:4)//'ALBC')
- new variable LBCINC in NAMOPH tells if the time stamp used with the coupling files names should be in hours (.TRUE. ; pattern = "+hhhh") or as an adimensional number (.FALSE., default value ; pattern = "nnn").
- CFNHWF in NAMOPH is now 256 characters long, so that it can be a file name on a specific target directory as well.
- CFPNCF, put in NAMCT0, is now 128 characters long, so that it can be a file name on a specific target directory as well.

Some code cleanings has been done together with this development.

Project: aladin,arpege
ClearCase branch: mrpm602_CY35T1_save2gfs

Added:

arp/dia suofname.F90

Modified:

ald/inidata	elsirf.F90		
ald/setup	sueoph.F90		
arp/canari	canari.F90	carcli.F90	
arp/climate	cormass.F90		
arp/control	restart_cnt3.F90	testli.F90	testlievol.F90
arp/dfi	dfi2.F90	dfi2mod.F90	
arp/dia	inifaout.F90	posddh.F90	suofname.F90
	wrmlppa.F90	wroutspgb.F90	
arp/fullpos	specfita.F90		
arp/module	yemop.F90	yomct0.F90	yomop.F90
arp/namelist	namct0.h	namoph.h	
arp/ocean	wrcom.F90		
arp/setup	su0yomb.F90	su1yom.F90	sucaclia.F90
	suct0.F90	sugrida.F90	sugridf.F90
	sugridva.F90	suinif.F90	suoph.F90
arp/utility	openfa.F90	read_surfgrid_traj_fromfa.F90	
arp/var	suecges.F90		

GCO

Doc:

Fix initialization of logical unit NPDIRL in sulun.F90 (92 instead of 91).

Project: arpege
ClearCase branch: marp001_CY33T1_op1isp

Modified:

arp/setup sulun.F90

Doc:

Fix compilation errors for IBM & Portland Fortran compiler.

Project: arpege
ClearCase branch: marp001_CY35T1_fix

Modified:

arp/phys_dmn hlavcbr.F90
arp/setup su0yomb.F90

Doc:

Fix phasing bugs.

Project: arpege
ClearCase branch: marp001_CY35T1_fixlentch

Modified:

arp/phys_dmn suphy0.F90

Doc:

Fix phasing bugs.

Project: arpege
ClearCase branch: marp001_CY35T1_fixtke

Modified:

arp/phys_dmn acdifv1.F90 acmixelen.F90 aplpar.F90

Doc:

Remove obsolete routines.

Project: arpege,Meso-NH physique altitude
ClearCase branch: marp001_CY35T1_remove

Deleted:

arp/dia	aro_cpphddh.F90	iniapft_bp002.F90	
arp/module	yemmpvar.F90	yomafpds.F90	yomgamma.F90
	yomintgt.F90		
arp/obs_preproc	thinn.F90	thinner.F90	thinner_no_sq.F90
arp/phys_dmn	addft.F90	aro_iniapft.F90	
mpa/micro/externals	testapft.mnh		
mpa/micro/interface	testapft.h		

mse/module mode_coare25_psi.mnh

Doc:

** campaign_water_flux.mnh & coare25_flux.mnh: remove obsolete routines .*
** su0yomb.F90: fix a (very strange) compilation problem with Portland Fortran compiler.*
** sumpini.F90: add variable CFPNCF in list of used variables of module YOMCT0 (NB: CFPNCF has been added in namelist namct0.h).*
** version.c: - change value of VERSION_MAJOR (from 34 to 35) ;*
- change value of VERSION_MINOR (from 0.001 to 0.000) .
** Fix miscellaneous phasing bugs.*

Project: arpege
ClearCase branch: marp001_CY35T1_t2fix

Deleted:

mse/internals campaign_water_flux.mnh coare25_flux.mnh

Modified:

arp/control cnt4.F90 cnt4ad.F90 cnt4tl.F90
arp/setup su0yomb.F90 sumpini.F90
odb/lib version.c

GRIL Jean-Daniel

Doc:

Fix a bug in "editfield" (AKA edf), when using rotated tilted Mercator.

Project: utilitaires
ClearCase branch: mrpe604_CY35T1_pinutslmrt

Modified:

uti/pinuts/module editfield_prg_mod.F90

HIRLAM Consortium

Doc:

** xrd/support/cargs.c*
Alistar McKinstry: Improved identification of exectutable under Linux.

** xrd/support/dr_hook_util.F90*
Ulf Andrae: LLMPI not initalized in Dr_Hook.

** ald/utility/cchien.F90*
met.no: HARMONIE climate generation portability fix.

** mse/internals/scopy.F*
mse/internals/scopy.mnh
Ulf Andrae: scopy is in concflict with a Intel MKL routine (removed)

** arp/pp_obs/apache.F90*
Sami Niemela: Fix AROME postprocessing crash due to uninitialized variable

** arp/dfi/remez.F90*
xrd/misc/optremez.F
Adrian McKinstry: Fix typos isotermal -> isothermal; EXTERMAL -> EXTERNAL

** odb/cma2odb/setblsno.F90*
odb/cma2odb/setblshi.F90
odb/cma2odb/setbaire.F90
odb/cma2odb/setbsato.F90
odb/cma2odb/setbseas.F90
odb/cma2odb/setbuppa.F90
Adrian McKinstry: Patch from Hirlam for Irish BUFR elements.

** mse/internals/write_in_lfi_x2.mnh*
Sylvie Malardel and Sami Niemela: Generation of PGD-file added.

** arp/phys_dmn/hlavcbr.F90*
Ulf Andrae: Correct KIND error.

** mse/internals/prep_teb_unif.mnh*
Sami Niemela: Remove unused module which caused an internal compiler error on SGI Altix with IFORT 10.0.026.

Project: aladin,arpege,Meso-NH surface,odb,auxiliaire
ClearCase branch: mrpm636_CY35T1_hirlam

Added:

mse/internals campaign_water_flux.mnh coare25_flux.mnh

Deleted:

mse/internals scopy.F scopy.mnh

Modified:

ald/utility	cchien.F90		
arp/dfi	remez.F90		
arp/phys_dmn	hlavcbr.F90		
mse/internals	prep_teb_unif.mnh	write_in_lfi_x2.mnh	
odb/cma2odb	setbaire.F90	setblshi.F90	setblsno.F90
	setbsato.F90	setbseas.F90	setbuppa.F90
xrd/misc	optremez.F		
xrd/support	cargs.c	dr_hook_util.F90	

KARBOU Fatima

Doc:

This modset activates a new processing of surface emissivity for sea-ice, in micro-waves range. The activation of sea-ice emissivity module is possible
using keys in screening namelist.
The default for those keys is set to "FALSE". A key has been created for each instrument: LICE_AMSU, LICE_SSMI, LICE_SSMIS, LICE_TMI, LICE_AMSRE .
To activate the use of dynamical emissivity module for AMSU observations on sea-ice, keys LDYN_AMSU and LICE_AMSU have to be set to "TRUE" .

Project: arpege
ClearCase branch: mrpa681_CY35T1_EMIS_GLACE

Modified:

arp/module	yomemis.F90
arp/namelist	namemis_conf.h
arp/op_obs	hretr.F90
arp/setup	suemis_conf.F90

PAYAN Christophe

Doc:

** Cleanings in thinning.*
** Improvement of program qscat_25to50 .*
** Rename boolean L_NTRLHOP to LSCATT_NEUTRAL , in conformity with cycle CY35R2 .*

Project: arpege,scattt
ClearCase branch: mrpa642_CY35T1_t2_thinpruning

Modified:

arp/module	yomobs.F90		
arp/namelist	namobs.h		
arp/obs_preproc	decis.F90	defrun.F90	thinn.F90
	thinner.F90	thinner_no_sq.F90	
arp/pp_obs	ppobsac.F90	ppobsacad.F90	ppobsactl.F90
sct/programs	qscat25to50km.F		

Doc:

1) Neutral wind for SCAT .
2) QI for EARS MODIS .
3) Production subcode for EARS SCAT .
4) Update mf_blacklist.b for SATOB geostationnary satellite in reserve.
5) Cleannings for BATOR in ERSUWI processing.
6) Possibility to process or not geowinds by satid and canalid, by namelist (query from Hungary).
7) Fix a print format, concerning the distribution by processor of SATOB observations.

Project: arpege,black_list,odb,scattt
ClearCase branch: mrpa642_CY35T1_ventneutre_modis_eascat_etc

Modified:

arp/canari	caclsi.F90		
arp/fullpos	fpachmt.F90		
arp/module	yomobs.F90		
arp/namelist	namobs.h		
arp/obs_preproc	defrun.F90	new_thinn.F90	pre_thinner.F90
arp/phys_dmn	achmt.F90	achmtad.F90	achmttl.F90
	acntcls.F90	acntclsad.F90	acntclstl.F90
	aplpar.F90	hl_aplpar.F90	
arp/pp_obs	ppobsac.F90	ppobsacad.F90	ppobsactl.F90
arp/var	ecset.F90		
bla	mf_blacklist.b		
odb/pandor/module	bator_decodbufr_mod.F90	bator_init_mod.F90	bator_module.F90
	bator_saisies_mod.F90		
odb/pandor/namelist	bator_namelist.h		
sct/programs	qscat25to50km.F		

PIRIOU Jean-Marcel

Doc:

Correction of an inactive bug. This bug could have become active only if one would produce DDH-LFA files at ECMWF instead of DDH-pseudogrib files.

Project: arpege
ClearCase branch: marp001_CY35T1_jmp_ppfidh

Modified:

arp/dia ppfidh.F90

Doc:

Remove bug in DDH, when defining a DDH domain from the user namelist, with integer indices (domain-type = 1).

Project: arpege
ClearCase branch: mrpm606_CY35T1_ddhindices

Modified:

arp/dia sumddh.F90

RIVIERE Olivier

Doc:

1) Bugfixes for AROME DDH .
2) It is now possible to activate flexible DDH data flow in ARPEGE/ALADIN/ALARO with key LFLEXDIA set to "TRUE" in NAMDDH .
.

Project: arpege
ClearCase branch: mrpe601_CY35T1_ddh_newdataflow_35t2

Modified:

arp/dia	cpdyddh.F90	cpphddh.F90	ppfidh.F90
	sunddh.F90		
arp/namelist	namddh.h		
mpa/micro/module	moddb_intbudget.mnh		
mpa/turb/internals	shallow_mf.mnh		
xrd/module	ddh_mix.F90		

SEITY Yann

Doc:

1) Bugfix n8 of surfex4 .
2) AROME cleanings in apl_arome.F90 .
3) Bugfix for chemical .

Project: arpege,Meso-NH surface
ClearCase branch: mrpm637_CY35T1_arome

Added:

mse/internals	get_surf_undef.mnh	second_sfx.mnh	
mse/module	modd_timing.mnh		

Modified:

arp/phys_dmn	apl_arome.F90		
mse/externals	aroini_surf.mnh	atm2sx_env.mnh	atm2sx_field.mnh
	ini_prep_surfex_aro.mnh		
mse/internals	ch_dep_isba.mnh	ch_dep_town.mnh	ch_dep_water.mnh
	coupling_dst_n.mnh	coupling_flake_n.mnh	coupling_flake_sbl_n.mnh
	coupling_isba_canopy_n.mnh	coupling_seaflux_sbl_n.mnh	coupling_watflux_sbl_n.mnh
	default_surf_atm.mnh	detect_field.mnh	flake_interface.mnh
	get_surf_undef.mnh	get_surf_var_n.mnh	get_var_nature_n.mnh
	get_var_sea_n.mnh	get_var_town_n.mnh	get_var_water_n.mnh
	goto_wrapper_ocean.mnh	goto_wrapper_seaflux.mnh	ini_data_param.mnh
	init_dst_n.mnh	init_isba_n.mnh	init_surf_atm_n.mnh
	interpol_field2d.mnh	mixtl_n.mnh	open_file.mnh

	pgd_bathyfield.mnh	pgd_cover.mnh	pgd_field.mnh
	pgd_flake.mnh	pgd_isba.mnh	pgd_orography.mnh
	prep_grib_grid.mnh	prep_isba.mnh	prep_isba_canopy.mnh
	read_direct.mnh	read_isba_n.mnh	read_nam_pgd_isba.mnh
	read_nam_pgd_seabathy.mnh	second_sfx.mnh	write_diag_seb_isba_n.mnh
	writesurf_isba_n.mnh		
mse/module	mod1d_n.mnh	modd_chs_aerosol.mnh	modd_surf_atm.mnh
	modd_timing.mnh	mode_read_buffer.mnh	modi_default_surf_atm.mnh
	modi_get_surf_var_n.mnh	modi_get_var_nature_n.mnh	modi_get_var_sea_n.mnh
	modi_get_var_town_n.mnh	modi_get_var_water_n.mnh	modi_prep_isba_canopy.mnh
	modi_read_nam_pgd_isba.mnh		

Doc:

1) Use XUNDEF of surfex in "mse/externals" routines, instead of this from "mpa" project.

2) Bugfixes:
** Initialization of file type used by AROME (LFI) in the module MODD_IO_SURF_ARO , with the aim to fix a crash in surface file preparation, since the introduction of modifications in I/O (FA) for ARPEGE-Climate .*
** Fix for activation of fog sedimentation.*
** Bugfix for chemical.*

Project: Meso-NH physique altitude,Meso-NH surface
ClearCase branch: mrpm637_CY35T1_bfssurfex

Modified:

mpa/chem/externals	aro_mnhdust.mnh		
mpa/chem/internals	init_dust.mnh		
mpa/micro/internals	rain_ice.mnh		
mpa/micro/module	modd_parameters.mnh		
mse/externals	aro_ground_diag.mnh	aro_ground_param.mnh	aro_surf_diag.mnh
	aroini_surf.mnh		
mse/module	modd_io_surf_aro.mnh	modd_surf_par.mnh	

TAILLEFER Francoise

Doc:

** Cleaning of variables STR & SWR (used in configuration 923), replaced by RSTR & RSWR .*
** sugrclia.F90: fix a CANARI crash.*
** can1.F90: fix a useless and hazardous modification introduced in cycle CY34 .*
** caclsst.F90: adjust transition threshold between ice phase and liquid water phase on SST climatological field.*

Project: aladin,arpege
ClearCase branch: mrpa647_CY35T1_net

Modified:

ald/c9xx	eincli10.F90	eincli6.F90	
arp/c9xx	incli0.F90	incli10.F90	incli6.F90
arp/canari	caclsst.F90	can1.F90	
arp/module	yomcli.F90		
arp/namelist	namcli.h		
arp/setup	sugrclia.F90		

TERMONIA Piet

Doc:

1. General comments:

In ALADIN, DFI is applied on the spectral coefficients. SSDFI can be most easily understood as a standard DFI but where the filter weights depend on the wave number.
This document can be kept brief since all the scientific details can be found in Termonia (2008).

2. Code:

The phased code exists in clearcase in cy35t1 branch arp mrpm616 CY35T1 ssdfi.

2a. Relevant files:

The essence of the changes is that the filtering weights now depend on the wave number. Therefore (i) the wave number has to be computed explicitly (now done in the rountines SMPFIL and DOLFIL) and (ii) the filtering itself is done in a loop over the wave numbers (in DIGFIL and DIGFILAD).
** arp/module/yomdfi.F90*
** arp/setup/su0yomb.F90:*
the call to the routines SUDFI is moved here. This was necessary to have the variables of the spctral spave initialized before calling the setup of the (SS)DFI.
** arp/dfi/digfil.F90*
** arp/dfi/digfilad.F90*
** arp/dfi/sudfi.F90:*
** arp/dfi/sufw.F90:*
** arp/dfi/suini.F90:*
** arp/dfi/simfil.F90*
** arp/dfi/dolfil.F90*
** arp/utility/deallo.F90*
** arp/namelist/namdfi.h*

The only NEW namelist variable RDFIS is read here.

2b. Namelist variables in namdfi.h

Compared to the standard DFI there is one more namelist variable:
** RDFIS is the velocity c in the paper of Termonia (2008).*
The default value is RDFIS = 0.0 which is the old DFI (i.e. not scale-selective) with cut-off frequency.

So if the code is run with the old namelists the users should notice no change whatsoever.

3. TODO

** SSDFI does not work yet for Arpege, the code can only be used with DFI. The problem is located in the loop*

```
DO JMLOC=1,NUMP
  JM=MYMS(JMLOC)
  DO JN=0,(NCPL4M(JM)/4)-1
    ...
  ENDDO
ENDDO
```

where JM and JN are the m and n wave numbers on the ellips. This loop should be adapted to have SSDFI for Arpege. However, to do this some extra research is needed to study the role of the stretching in this.

** Some old filters (e.g. recursive filters) can not be used at present. The code is protected at present for erroneously using them by some ABORTs in SUFW.*

Project: arpege
ClearCase branch: mrpm616_CY35T1_ssdfi

Modified:

arp/dfi	digfil.F90	digfilad.F90	dolfil.F90
	smpfil.F90	sudfi.F90	sufw.F90
	suini.F90		
arp/module	yomdfi.F90		
arp/namelist	namdfi.h		
arp/setup	su0yomb.F90		
arp/utility	deallo.F90		

VANA Filip

Doc:

The aim of the modification is to reset all the NL physics setting after the non-linear computation is done and before the adjoint computation starts (similarly to what happens in 131).

Additionally all the GFL advection is switched off (except for moisture when MF simplified physics is active) to save CPU from passive (AD) advection of all those arrays used in NL computation.

Project: arpege
ClearCase branch: mrpe706_CY35T1_801

Modified:

arp/control	cgr1.F90	sim4d.F90

Doc:

TL/AD of the SLHD scheme (both grid-point and spectral part), proper set up for the LSLHD=.T. and LSLHD_STATIC=.T.

The aim of modification is to fix the strange memory problem appearing when too many dummy arguments are undefined (even when they are unused). This time the problematic routine appears LASCAWTL. This modset fixes this issue by providing the routine local arrays with defined size.

Note that the Aladin routine ELASCAWTL doesn't need similar fix (probably it is due smaller number of dummy arguments). The adjoint (LASCAWAD, ELASCAWAD) is also safe with respect to this
issue, as in this case "the problematic arrays" are declared as output.

The mentioned fix should have no impact to the results (once computation gets so far).

Project: aladin,arpege
ClearCase branch: mrpe706_CY35T1_slhdfor35t2

Added:

arp/adiab	gp_kappaad.F90	gp_kappatl.F90	gpinislb2vc.F90
	laidqm.F90	laihvtqm.F90	laihvtqmh.F90
	laitqm.F90	laitqmh.F90	latte_kappaad.F90
	latte_kappatl.F90		

Modified:

ald/adiab	espchor.F90	espchorad.F90	
ald/setup	suehdf.F90		
arp/adiab	call_sl_ad.F90	call_sl_tl.F90	cpg5.F90
	cpg_dyn.F90	cpg_dyn_ad.F90	cpg_dyn_tl.F90
	cpgad.F90	cpgtl.F90	gp_kappaad.F90
	gp_kappatl.F90	lacdynad.F90	lacdyntl.F90
	lapinea5.F90	lapineaad.F90	lapineatl.F90
	larcinatl.F90	lascawad.F90	latte_kappaad.F90
	latte_kappatl.F90	spchor.F90	spchorad.F90
arp/control	cnt4.F90	cnt4ad.F90	cnt4tl.F90
	gp_model_tl.F90	stepo.F90	stepotl.F90
arp/dfi	dfi3.F90		
arp/module	ptrslb2.F90	traj_semilag_mod.F90	yomct3.F90
arp/setup	sualdynb.F90	sudyn.F90	suhdf.F90
	suhdfvareps.F90	suhdir.F90	suhdu.F90
	suslb.F90		

Doc:

1/ Rationalization of the pTKE code when all issues specific to LPTKE key were moved to ACPTKE from the ACDIFV1 rutine. This also simplifies the dataflow in APLPAR reducing number of arrays to be transferred between ACPTKE and ACDIFV1.
2/ Introduction of the family of TKE-type (e-type) mixing lengths for pTKE. The possible alternatives are:
EL1 for modified Bougeault-Lacarrere (MWR, 1989),
EL2 for previous secured by GC length,
EL3 for classical e/N type mixing length and

EL4 for previous secured by GC length.
For compatibility reasons all those mixing lengths are converted
to the Prandtl kind of mixing length.
3/ Bugfix of the bottom boundary condition for pTKE solver and rationalization
of two arrays initialization in APLPAR.
4/ Preparation for the eTKE scheme:
- new stabilization of the pTKE solver (not yet activated for the moment)
- new set of tunables (C3, C4, CTHETA)
- removed tunable GAMTKE as its variation is not desirable.

Project: arpege
ClearCase branch: mrpe706_CY35T1_turb

Added:

arp/phys_dmn	acmixelen.F90

Modified:

arp/module	yomphy0.F90		
arp/namelist	namphy0.h		
arp/phys_dmn	acdifus.F90	acdifv1.F90	acmixelen.F90
	acptke.F90	aplpar.F90	suphy0.F90

WATTRELOT Eric

Doc:

Replace use of modules yomgamma.F90 & yomintgt.F90 by use of functions utility/fcgeneralized_gamma.F90 & op_obs/fcintgt.F90 .

Project: arpege
ClearCase branch: mrpa652_CY35T1_cy35t1bt2_ew

Added:

arp/op_obs	fcintgt.F90
arp/utility	fcgeneralized_gamma.F90

Modified:

arp/module	yomclmicst.F90		
arp/op_obs	fcintgt.F90	reflsim.F90	reflsim_2dop.F90
arp/phys_dmn	advprc.F90	advprcs.F90	
arp/utility	fcgeneralized_gamma.F90		

YESSAD Karim

Doc:

Modification code:

BUGFIX : bug correction.

HARMOPOLGW : Harmonisation of the ARP/IFS and TFL versions of SUPOL and SUGAW; rename the ARP versions with ending letter "A" (SUGAWA, SUPOLA, GAWLA, CPLEDNA).

MERGCOMM : Merge of SLCOMM + SLCOMM1 => SLCOMM.

MERGEXTPOL : Merge of SLEXTPOL+SLEXTPOL1+SLEXTPOL1A+SLEXTPOL2 => SLEXTPOL.
Merge of ESLEXTPOL+ESLEXTPOL1+ESLEXTPOL1A+ESLEXTPOL2 => ESLEXTPOL.

MERGTRIDIA : Merge of TRIDIALCZ + TRIDIAVSPL => TRIDIA.

NETCOSM : cosmetic cleanings:
- remove dummy argument CDLOCK.
- remove some useless dummy arguments.
- add missing comments.
- some other miscellaneous cleanings.

OBSOLETE : removal of some other obsolete routines.

UPDSL : modifications in the semi-Lagrangian scheme:
- rationalisation of the dummy arguments interfaces in the SL scheme, in particuliar under CALL_SL (+TL,AD).
- merge LAITRI+LAITQM+LAITQMH => LAITRI.
- merge LAIHVT+LAIHVTQM+LAIHVTQMH => LAIHVT.
- merge LAIDDI+LAIDQM => LAIDDI.
- additional cleanings (remove useless features).
- some OpenMP features modified by F. Vana in the adjoint code.

Ccase branch name:
mrpm603_CY35T1_dev35t1pour35t2

Modified elements:

ald/adiab/elarmes5.F90 : UPDSL
ald/adiab/elarmesad.F90 : UPDSL
ald/adiab/elarmes.F90 : UPDSL
ald/adiab/elarmestl.F90 : UPDSL
ald/adiab/elascawad.F90 : UPDSL
ald/adiab/elascaw.F90 : UPDSL
ald/adiab/elascawtl.F90 : UPDSL

ald/parallel/eslextpol.F90 : MERGEXTPOL

arp/adiab/call_sl_ad.F90 : UPDSL,MERGEXTPOL,MERGCOMM
arp/adiab/call_sl.F90 : UPDSL,MERGEXTPOL,MERGCOMM
arp/adiab/call_sl_tl.F90 : UPDSL,MERGEXTPOL,MERGCOMM
arp/adiab/cpeuldynad.F90 : NETCOSM
arp/adiab/cpeuldyn.F90 : NETCOSM
arp/adiab/cpeuldyntl.F90 : NETCOSM

arp/adiab/cpg25.F90 : NETCOSM
arp/adiab/cpg2ad.F90 : NETCOSM
arp/adiab/cpg2.F90 : NETCOSM
arp/adiab/cpg2lagad.F90 : NETCOSM
arp/adiab/cpg2lagtl.F90 : NETCOSM
arp/adiab/cpg2lag.F90 : NETCOSM
arp/adiab/cpg2tl.F90 : NETCOSM
arp/adiab/cpg5.F90 : NETCOSM
arp/adiab/cpg5_gp.F90 : NETCOSM
arp/adiab/cpgad.F90 : NETCOSM
arp/adiab/cpg_dia.F90 : NETCOSM
arp/adiab/cpg_dyn_ad.F90 : NETCOSM
arp/adiab/cpg_dyn.F90 : NETCOSM
arp/adiab/cpg_dyn_tl.F90 : NETCOSM
arp/adiab/cpg_end_ad.F90 : NETCOSM
arp/adiab/cpg_end.F90 : NETCOSM
arp/adiab/cpg_end_tl.F90 : NETCOSM
arp/adiab/cpg.F90 : NETCOSM
arp/adiab/cpg_gp_ad.F90 : NETCOSM
arp/adiab/cpg_gpb_nhgeogw.F90 : NETCOSM
arp/adiab/cpg_gp.F90 : NETCOSM
arp/adiab/cpg_gp_tl.F90 : NETCOSM
arp/adiab/cpglagad.F90 : NETCOSM
arp/adiab/cpglag.F90 : NETCOSM
arp/adiab/cpglagtl.F90 : NETCOSM
arp/adiab/cpgtl.F90 : NETCOSM
arp/adiab/cpg_zero_ad.F90 : NETCOSM
arp/adiab/cpmvvps.F90 : NETCOSM
arp/adiab/gnh_conv_nhvar_geogw.F90 : NETCOSM
arp/adiab/gnhx.F90 : NETCOSM
arp/adiab/gpcty.F90 : NETCOSM
arp/adiab/gpendtr.F90 : NETCOSM
arp/adiab/gpgrgeoad.F90 : NETCOSM
arp/adiab/gpgrgeo.F90 : NETCOSM
arp/adiab/gpgrgeotl.F90 : NETCOSM
arp/adiab/gpgrpad.F90 : NETCOSM
arp/adiab/gpgrp.F90 : NETCOSM
arp/adiab/gpgrptl.F90 : NETCOSM
arp/adiab/gpgrvcmus.F90 : NETCOSM
arp/adiab/gpgrvcrs.F90 : NETCOSM
arp/adiab/gpgrxybad.F90 : NETCOSM
arp/adiab/gpgrxyb.F90 : NETCOSM
arp/adiab/gpgrxybtl.F90 : NETCOSM
arp/adiab/gphluvad.F90 : NETCOSM
arp/adiab/gphluv.F90 : NETCOSM
arp/adiab/gphluvtl.F90 : NETCOSM
arp/adiab/gphlwiad.F90 : NETCOSM
arp/adiab/gphlwi.F90 : NETCOSM
arp/adiab/gphlwitl.F90 : NETCOSM
arp/adiab/gpmktendad.F90 : NETCOSM
arp/adiab/gpmktend.F90 : NETCOSM
arp/adiab/gpmpfc.F90 : NETCOSM
arp/adiab/gpmpfc_gmvs.F90 : NETCOSM
arp/adiab/gppvo.F90 : NETCOSM
arp/adiab/gprtad.F90 : NETCOSM

arp/adiab/gprt.F90 : NETCOSM
arp/adiab/gprttl.F90 : NETCOSM
arp/adiab/gp_spvad.F90 : NETCOSM
arp/adiab/gp_spv.F90 : NETCOSM
arp/adiab/gp_spvtl.F90 : NETCOSM
arp/adiab/gptf1ad.F90 : NETCOSM
arp/adiab/gptf1.F90 : NETCOSM
arp/adiab/gptf1pc.F90 : NETCOSM
arp/adiab/gptf2ad.F90 : NETCOSM
arp/adiab/gptf2.F90 : NETCOSM
arp/adiab/gptf2pc.F90 : NETCOSM
arp/adiab/gpvcmus.F90 : NETCOSM
arp/adiab/gpvcrs.F90 : NETCOSM
arp/adiab/gpvcts.F90 : NETCOSM
arp/adiab/gpvcw.F90 : NETCOSM
arp/adiab/gpverdia.F90 : NETCOSM
arp/adiab/lacdyn.F90 : NETCOSM
arp/adiab/lacdynshwad.F90 : NETCOSM
arp/adiab/lacdynshw.F90 : NETCOSM
arp/adiab/lacdynshwtl.F90 : NETCOSM
arp/adiab/ladad.F90 : NETCOSM
arp/adiab/ladinead.F90 : NETCOSM
arp/adiab/ladine.F90 : NETCOSM
arp/adiab/ladinetl.F90 : NETCOSM
arp/adiab/laiddi.F90 : UPDSL
arp/adiab/laihvt.F90 : UPDSL
arp/adiab/lainor2ad.F90 : NETCOSM
arp/adiab/lainor2.F90 : NETCOSM
arp/adiab/lainor2tl.F90 : NETCOSM
arp/adiab/laitre_gfl.F90 : UPDSL,NETCOSM
arp/adiab/laitre_gmv.F90 : UPDSL,NETCOSM
arp/adiab/laitri.F90 : UPDSL
arp/adiab/lapinea5.F90 : UPDSL
arp/adiab/lapineaad.F90 : UPDSL
arp/adiab/lapinea.F90 : UPDSL
arp/adiab/lapineatl.F90 : UPDSL
arp/adiab/lapinebad.F90 : UPDSL
arp/adiab/lapineb.F90 : UPDSL,NETCOSM
arp/adiab/lapinebtl.F90 : UPDSL
arp/adiab/larcin2ad.F90 : NETCOSM
arp/adiab/larcin2.F90 : NETCOSM
arp/adiab/larcin2tl.F90 : NETCOSM
arp/adiab/larcinaad.F90 : UPDSL
arp/adiab/larcina.F90 : UPDSL
arp/adiab/larcinatl.F90 : UPDSL
arp/adiab/larcinb5.F90 : UPDSL
arp/adiab/larcinbad.F90 : UPDSL
arp/adiab/larcinb.F90 : UPDSL
arp/adiab/larcinbtl.F90 : UPDSL
arp/adiab/larcinha.F90 : UPDSL
arp/adiab/larcinhb.F90 : UPDSL
arp/adiab/larmes25.F90 : NETCOSM
arp/adiab/larmes2ad.F90 : NETCOSM
arp/adiab/larmes2.F90 : NETCOSM
arp/adiab/larmes2tl.F90 : NETCOSM

arp/adiab/larmes5.F90 : UPDSL
arp/adiab/larmesad.F90 : UPDSL
arp/adiab/larmes.F90 : UPDSL
arp/adiab/larmestl.F90 : UPDSL
arp/adiab/lascaw.F90 : NETCOSM
arp/adiab/lascawad.F90 : NETCOSM
arp/adiab/lascawtl.F90 : NETCOSM
arp/adiab/lattex5.F90 : NETCOSM
arp/adiab/lattextl.F90 : NETCOSM
arp/adiab/lattey.F90 : NETCOSM
arp/adiab/pre_sladrep.F90 : MERGCOMM

arp/control/gp_model_ad.F90: NETCOSM
arp/control/gp_model.F90 : MERGEXTPOL,MERGCOMM,NETCOSM
arp/control/gp_model_tl.F90: NETCOSM
arp/control/scan2mad.F90 : MERGEXTPOL,NETCOSM
arp/control/scan2m.F90 : MERGEXTPOL,MERGCOMM,NETCOSM
arp/control/scan2mtl.F90 : MERGEXTPOL,NETCOSM

arp/dia/cpdyddh.F90 : NETCOSM
arp/dia/cpphddh.F90 : NETCOSM,BUGFIX
arp/dia/cumcpl.F90 : NETCOSM

arp/fullpos/cpclimi.F90 : MERGEXTPOL,MERGCOMM
arp/fullpos/endpos.F90 : NETCOSM
arp/fullpos/fpachmt.F90 : NETCOSM
arp/fullpos/fpmodprec.F90 : MERGEXTPOL,MERGCOMM
arp/fullpos/phymfpos.F90 : NETCOSM
arp/fullpos/sufpcuf.F90 : NETCOSM
arp/fullpos/sufpg1.F90 : HARMOPOLGW

arp/op_obs/cobsad.F90 : NETCOSM
arp/op_obs/cobs.F90 : NETCOSM
arp/op_obs/cobstl.F90 : NETCOSM
arp/op_obs/slintad.F90 : MERGEXTPOL,NETCOSM
arp/op_obs/slint.F90 : MERGEXTPOL,NETCOSM

arp/parallel/slcomm.F90 : MERGCOMM
arp/parallel/slextpolad.F90: NETCOSM
arp/parallel/slextpol.F90 : MERGEXTPOL
arp/parallel/packmsg.F90 : NETCOSM
arp/parallel/unpkmsg.F90 : NETCOSM

arp/phys_dmn/mf_physad.F90 : NETCOSM
arp/phys_dmn/mf_phys.F90 : NETCOSM
arp/phys_dmn/mf_phystl.F90 : NETCOSM

arp/phys_ec/ec_phys_ad.F90 : NETCOSM
arp/phys_ec/ec_phys_drv.F90 : NETCOSM
arp/phys_ec/ec_phys_lslphy.F90 : NETCOSM
arp/phys_ec/ec_phys_tl.F90 : NETCOSM
arp/phys_ec/ec_physg.F90 : MERGEXTPOL
arp/phys_ec/radintg.F90 : MERGEXTPOL,MERGCOMM,NETCOSM

arp/pp_obs/pos.F90 : NETCOSM

arp/pp_obs/ppvvel.F90 : NETCOSM

arp/setup/rotat.F90 : NETCOSM
arp/setup/sudyn.F90 : BUGFIX
arp/setup/suemis_conf.F90 : NETCOSM
arp/setup/sugem1a.F90 : HARMOPOLGW
arp/setup/suplis.F90 : HARMOPOLGW,NETCOSM
arp/setup/surot.F90 : NETCOSM
arp/setup/suslad2.F90 : MERGCOMM

arp/sinvect/vdiflczad.F90 : MERGTRIDIA,NETCOSM
arp/sinvect/vdiflcz.F90 : MERGTRIDIA,NETCOSM
arp/sinvect/vdiflcztl.F90 : MERGTRIDIA,NETCOSM

arp/utility/grid_from_grib.F90 : HARMOPOLGW
arp/utility/specimzero.F90 : NETCOSM
arp/utility/vspltrans.F90 : MERGTRIDIA,NETCOSM

arp/var/multqnorm.F90 : NETCOSM
arp/var/sunne.F90 : NETCOSM

tfl/module/cpledn_mod.F90 : HARMOPOLGW
tfl/module/gawl_mod.F90 : HARMOPOLGW
tfl/module/sugaw_mod.F90 : HARMOPOLGW
tfl/module/supol_mod.F90 : HARMOPOLGW

Added elements:

arp/setup/cpledna.F90 : HARMOPOLGW
arp/setup/gawla.F90 : HARMOPOLGW
arp/setup/sugawa.F90 : HARMOPOLGW
arp/setup/supola.F90 : HARMOPOLGW

xla/external/linalg/tridia.F90 : MERGTRIDIA
xla/interface/tridia.intfb.h : MERGTRIDIA

Removed elements:

ald/parallel/eslextpol1a.F90 : MERGEXTPOL
ald/parallel/eslextpol1.F90 : MERGEXTPOL
ald/parallel/eslextpol2.F90 : MERGEXTPOL

arp/adiab/gpinislb2vc.F90 : NETCOSM
arp/adiab/laidqm.F90 : UPDSL
arp/adiab/laihvtqm.F90 : UPDSL
arp/adiab/laihvtqmh.F90 : UPDSL
arp/adiab/laitqm.F90 : UPDSL
arp/adiab/laitqmh.F90 : UPDSL

arp/namelist/namtrmm.h : OBSOLETE
arp/namelist/namtrm.h : OBSOLETE
arp/namelist/namtestvar.h : OBSOLETE

arp/module/partrmm.F90 : OBSOLETE
arp/module/yomtrmm.F90 : OBSOLETE

arp/parallel/slcomm1.F90 : MERGCOMM
arp/parallel/slextpol1a.F90 : MERGEXTPOL
arp/parallel/slextpol1.F90 : MERGEXTPOL
arp/parallel/slextpol2.F90 : MERGEXTPOL

arp/phys_ec/aer_bdgtmss_ad.F90 : OBSOLETE
arp/phys_ec/aer_bdgtmss_tl.F90 : OBSOLETE
arp/phys_ec/aer_drydep_ad.F90 : OBSOLETE
arp/phys_ec/aer_drydep_tl.F90 : OBSOLETE
arp/phys_ec/aer_scavbc_ad.F90 : OBSOLETE
arp/phys_ec/aer_scavbc_tl.F90 : OBSOLETE
arp/phys_ec/aer_scavin_ad.F90 : OBSOLETE
arp/phys_ec/aer_scavin_tl.F90 : OBSOLETE
arp/phys_ec/aer_sdust_ad.F90 : OBSOLETE
arp/phys_ec/aer_sdust_tl.F90 : OBSOLETE
arp/phys_ec/aer_sedim.F90 : OBSOLETE
arp/phys_ec/aer_sedimnt_ad.F90 : OBSOLETE
arp/phys_ec/aer_sedimnt_tl.F90 : OBSOLETE
arp/phys_ec/aer_ssalt_ad.F90 : OBSOLETE
arp/phys_ec/aer_ssalt_tl.F90 : OBSOLETE
arp/phys_ec/diagrad.F90 : OBSOLETE
arp/phys_ec/radlswm.F90 : OBSOLETE
arp/phys_ec/su_3dno2clim.F90 : OBSOLETE

arp/phys_radi/uvabs.F90 : OBSOLETE
arp/phys_radi/uvo3.F90 : OBSOLETE

arp/setup/cpledn.F90 : HARMOPOLGW
arp/setup/gawlm.F90 : HARMOPOLGW
arp/setup/gawl.F90 : HARMOPOLGW
arp/setup/sugaw.F90 : HARMOPOLGW
arp/setup/supol.F90 : HARMOPOLGW

arp/utility/pkgridg.F90 : OBSOLETE
arp/utility/pkspecg.F90 : OBSOLETE

xla/external/linalg/tridialcz.F90 : MERGTRIDIA
xla/external/linalg/tridiavspl.F90 : MERGTRIDIA
xla/interface/tridialcz.intfb.h : MERGTRIDIA
xla/interface/tridiavspl.intfb.h : MERGTRIDIA

xrd/minim/not_used/ctcab.F : OBSOLETE
xrd/minim/not_used/ctonb.F : OBSOLETE

Modifications in namelists:

remove obsolete elements NAMTRMM, NAMTRM

Scientific description of your modification(s):

See paragraph 'Code modif.'

Influence on the results:

- DDH with LVERCOR=T: some results may be different because a bug has been fixed in CPPHDDH.
- no other significant differences, only numerical differences may occur.

Where to report the modification(s):

None

Other remarks:

** It is not possible for the time being to use only the TFL versions of SUGAW and SUPOL, because they require the TFL setup, and because some calls of SUGAW and SUPOL under SU0YOMB are currently called too early (set-up of TFL not yet available). A future reorganisation of SU0YOMB may be necessary for that and also to avoid redundant calculations (Gaussian latitudes and weights for example).*
** This contribution does not include Filip Vana developpements about TL and AD of SLHD (TL and AD of routines LATTE_). Developpments of F. Vana are expected on the top of this branch.*

Project: aladin,arpege,transformées arpege,,auxiliaire
ClearCase branch: mrpm603_CY35T1_dev35t1pour35t2

Renamed:

arp/setup	cpledn.F90 to arp/setup/cpledna.F90
	gawl.F90 to arp/setup/gawla.F90
	sugaw.F90 to arp/setup/sugawa.F90
	supol.F90 to arp/setup/supola.F90
xla/external/linalg	tridialcz.F90 to xla/external/linalg/tridia.F90
xla/interface	tridialcz.intfb.h to xla/interface/tridia.intfb.h

Deleted:

ald/parallel	eslextpol1.F90	eslextpol1a.F90	eslextpol2.F90
arp/adiab	gpinislb2vc.F90	laidqm.F90	laihvtqm.F90
	laihvtqmh.F90	laitqm.F90	laitqmh.F90
arp/module	partrmm.F90	yomtrmm.F90	
arp/namelist	namtestvar.h	namtrm.h	namtrmm.h
arp/parallel	slcomm1.F90	slextpol1.F90	slextpol1a.F90
	slextpol2.F90		
arp/phys_ec	aer_bdgtmss_ad.F90	aer_bdgtmss_tl.F90	aer_drydep_ad.F90
	aer_drydep_tl.F90	aer_scavbc_ad.F90	aer_scavbc_tl.F90
	aer_scavin_ad.F90	aer_scavin_tl.F90	aer_sdust_ad.F90
	aer_sdust_tl.F90	aer_sedim.F90	aer_sedimnt_ad.F90
	aer_sedimnt_tl.F90	aer_ssalt_ad.F90	aer_ssalt_tl.F90
	diagrad.F90	radlswm.F90	su_3dno2clim.F90
arp/phys_radi	uvabs.F90	uvo3.F90	
arp/setup	gawlm.F90		
arp/utility	pkgridg.F90	pkspecg.F90	

xla/external/linalg	tridiavspl.F90	
xla/interface	tridiavspl.intfb.h	
xrd/minim	not_used	
xrd/minim/not_used	ctcab.F	ctonb.F

Modified:

ald/adiab	elarmes.F90	elarmes5.F90	elarmesad.F90
	elarmestl.F90	elascaw.F90	elascawad.F90
	elascawtl.F90		
ald/parallel	eslextpol.F90		
arp/adiab	call_sl.F90	call_sl_ad.F90	call_sl_tl.F90
	cpeuldyn.F90	cpeuldynad.F90	cpeuldyntl.F90
	cpg.F90	cpg2.F90	cpg25.F90
	cpg2ad.F90	cpg2lag.F90	cpg2lagad.F90
	cpg2lagtl.F90	cpg2tl.F90	cpg5.F90
	cpg5_gp.F90	cpg_dia.F90	cpg_dyn.F90
	cpg_dyn_ad.F90	cpg_dyn_tl.F90	cpg_end.F90
	cpg_end_ad.F90	cpg_end_tl.F90	cpg_gp.F90
	cpg_gp_ad.F90	cpg_gp_tl.F90	cpg_gpb_nhgeogw.F90
	cpg_zero_ad.F90	cpgad.F90	cpglag.F90
	cpglagad.F90	cpglagtl.F90	cpgtl.F90
	cpmvvps.F90	gnh_conv_nhvar_geogw.F90	gnhx.F90
	gp_spv.F90	gp_spvad.F90	gp_spvtl.F90
	gpcty.F90	gpendtr.F90	gpgrgeo.F90
	gpgrgeoad.F90	gpgrgeotl.F90	gpgrp.F90
	gpgrpad.F90	gpgrptl.F90	gpgrvcmus.F90
	gpgrvcrs.F90	gpgrxyb.F90	gpgrxybad.F90
	gpgrxybtl.F90	gphluv.F90	gphluvad.F90
	gphluvtl.F90	gphlwi.F90	gphlwiad.F90
	gphlwitl.F90	gpmktend.F90	gpmktendad.F90
	gpmpfc.F90	gpmpfc_gmvs.F90	gppvo.F90
	gprt.F90	gprtad.F90	gprttl.F90
	gptf1.F90	gptf1ad.F90	gptf1pc.F90
	gptf2.F90	gptf2ad.F90	gptf2pc.F90
	gpvcmus.F90	gpvcrs.F90	gpvcts.F90
	gpvcw.F90	gpverdia.F90	lacdyn.F90
	lacdynshw.F90	lacdynshwad.F90	lacdynshwtl.F90
	ladad.F90	ladine.F90	ladinead.F90
	ladinetl.F90	laiddi.F90	laihvt.F90
	lainor2.F90	lainor2ad.F90	lainor2tl.F90
	laitre_gfl.F90	laitre_gmv.F90	laitri.F90
	lapinea.F90	lapinea5.F90	lapineaad.F90
	lapineatl.F90	lapineb.F90	lapinebad.F90
	lapinebtl.F90	larcin2.F90	larcin2ad.F90
	larcin2tl.F90	larcina.F90	larcinaad.F90
	larcinatl.F90	larcinb.F90	larcinb5.F90
	larcinbad.F90	larcinbtl.F90	larcinha.F90
	larcinhb.F90	larmes.F90	larmes2.F90

	larmes25.F90	larmes2ad.F90	larmes2tl.F90
	larmes5.F90	larmesad.F90	larmestl.F90
	lascaw.F90	lascawad.F90	lascawtl.F90
	lattex5.F90	lattextl.F90	lattey.F90
	pre_sladrep.F90		
arp/control	gp_model.F90	gp_model_ad.F90	gp_model_tl.F90
	scan2m.F90	scan2mad.F90	scan2mtl.F90
arp/dia	cpdyddh.F90	cpphddh.F90	cumcpl.F90
arp/fullpos	cpclimi.F90	endpos.F90	fpachmt.F90
	fpmodprec.F90	phymfpos.F90	sufpcuf.F90
	sufpg1.F90		
arp/op_obs	cobs.F90	cobsad.F90	cobstl.F90
	slint.F90	slintad.F90	
arp/parallel	packmsg.F90	slcomm.F90	slextpol.F90
	slextpolad.F90	unpkmsg.F90	
arp/phys_dmn	mf_phys.F90	mf_physad.F90	mf_phystl.F90
arp/phys_ec	ec_phys_ad.F90	ec_phys_drv.F90	ec_phys_lslphy.F90
	ec_phys_tl.F90	ec_physg.F90	radintg.F90
arp/pp_obs	pos.F90	ppvvel.F90	
arp/setup	cpledna.F90	gawla.F90	rotat.F90
	sudyn.F90	suemis_conf.F90	sugawa.F90
	sugem1a.F90	suplis.F90	supola.F90
	surot.F90	suslad2.F90	
arp/sinvect	vdiflcz.F90	vdiflczad.F90	vdiflcztl.F90
arp/utility	grid_from_grib.F90	specimzero.F90	vspltrans.F90
arp/var	multqnorm.F90	sunne.F90	
tfl/module	cpledn_mod.F90	gawl_mod.F90	sugaw_mod.F90
	supol_mod.F90		
xla/external/linalg	tridia.F90		
xla/interface	tridia.intfb.h		