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LAMFLAG_ODB

Recent tests showed that without any modifications in the code the only way to run 3DVAR screening in ALADIN 15 is to provide an input ODB containing only reports inside the C+I zone. At present the creation of this input ODB is done in two steps. In the first step the whole ODB is scanned through and for reports inside the C+I zone column **subtype@hdr** is set to 1 (and to 0 otherwise). Then in the second step (with the modified version of program **shuffle**) only reports with **subtype@hdr**=1 are selected and written out into a new ODB, which is now suitable for ALADIN purposes. The first task in this process and other optional selections are done by program **LAMFLAG_ODB**.

1. Program description

LAMFLAG_ODB is able to work in two modes, controlled by logical key **LOBSONLY**.

1.1. Selection based on geographical position and observation type (LOBSONLY=.F.)

In this mode the program scans through ODB for reports and if the logical key for the observation type of a report is .T. (see namelist NAMFOBS) and it is inside the C+I zone, then the following values will be put into ODB:

subtype@hdr=1
trlat@hdr=Y coordinate of report on the model grid
trlon@hdr=X coordinate of report on the model grid

If the LVAR=.F. (CANARI case), then reports in a CANZONE size zone around the C+I domain are also accepted. The coordinates can be computed in two ways: if LNEWGEOM=.F., then the origin of the coordinate system is the “SW” corner of the whole domain, otherwise the origin of the coordinate system is the centre of the C+I zone. For the rest of the reports the following values will be set:

subtype@hdr=0
trlat@hd=RMDI
trlon@hdr=RMDI

(For RMDI see module YOMANCS)

1.2. Selection based on observation type only (LOBSONLY=.T.)

In this case the program scans through ODB for reports and if the logical key for the observation type of a report is .T. then the following value will be put into ODB:

subtype@hdr=1

Otherwise subtype will have zero value:

subtype@hdr=0

The sources, the scripts and the namelists for **LAMFLAG_ODB** can be found on **kami** under the **~mrpm624/odb/lamflag** directory!

2. Namelists

The name of the namelist file must be **NAMELIST**. A sample namelist file can be found on kami: ~mrpm624/odb/lamflag/namelist/lamflag_odb.nml.

NAMFCNT: Specifies the selection mode.

LOBSONLY	.F.	.T.: Selection based on observation type only .F.: Selection based on geographical position and observation type

NAMFGEOM: Specifies ALADIN geometry. There are no default values! All parameters have to be specified explicitly.

ELAT0	Latitude of reference for the projection (in degrees)
ELON0	Longitude of reference for the projection (in degrees)
ELATC	Latitude of centre of the C+I zone (in degrees)
ELONC	Longitude of centre of the C+I zone (in degrees)
EDELX	Grid size along x-axis (in meters)
EDELY	Grid size along y-axis (in meters)
NDLUN	X coordinate of the “SW” corner of the C+I zone
NDGUN	Y coordinate of the “SW” corner of the C+I zone
NDLUX	X coordinate of the “NE” corner of the C+I zone
NDGUX	Y coordinate of the “NE” corner of the C+I zone
CANZONE	Size of the additional selection domain around the C+I zone for CANARI (in kilometers)
LVAR	.T.: Only points in the C+I zone are selected .F.: Points around the C+I domain in a CANZONE size zone are also selected (for CANARI)
LNEWGEOM	This variable controls the output coordinates (trlat, trlon in hdr) .T.: The origin of the coordinate system is the centre of the C+I zone .F.: The origin of the coordinate system is the “SW“ corner of the whole domain

NAMFOBS: Controls selection based on observation type.

LSYNOP	.T.	SYNOP selection
LAIREP	.T.	AIREP selection
LSATOB	.T.	SATOB selection
LDRIBU	.T.	DRIBU selection
LTEMP	.T.	TEMP selection
LPILOT	.T.	PILOT selection
LSATEM	.T.	SATEM selection
LPAOB	.T.	PAOB selection
LSCATT	.T.	Scatterometer selection

3. Source

The source of LAMFMAG_ODB can be found on kami in ~mrpm624/odb/lamflag/src directory. The sources are:

- angle.F90: EGGX
- ctxinitdb.F90: Definition of the context for getdb call. The name of the context is ‘SMALL’.
- eggxinter.F90: EGGX
- eggxpack.F90: EGGX
- lamflag_odb.F90: The main program.
- lamflag_odb_select.F90: The main subroutine.
- small.sql: Definition of the view for getting data from ODB.

4. Compilation

The compiler script can be found on kami: ~mrpm624/odb/lamflag/lamflag_odb.comp. The most important things to know about of this script are:

- The version of ODB must be specified in the beginning of the script. The complete name of the cycle is cy${cycle}${version}${bf}${numero}. At present compilation is based on: cy24t1_op1.04.
- For the compilation a temporary pack is created (under the $WORKDIR) with ~marp001/public/bin/mkpack.
- DIR_loc means the home directory of LAMFLAG_ODB package. All the source code to be compiled must be in directory $DIR_loc/src. No other FORTRAN and SQL files should be in $DIR_loc/src!
- From the compiled routines a static library (libperso.a) is created and is put into $DIR_loc.
- The executable (name is given by variable EXEC) is finally put into delage to a specified directory.

5. Run

The executable for **LAMFLAG_ODB** can be found on delage under the following name: /cnrm2_a/mrpm/mrpm624/exe/cy24t1/lamflag_odb.24t1_op1.04.

A sample script to run **LAMFLAG_ODB** is on kami: ~mrpm624/odb/lamflag/lamflag_odb.run. This script first executes LAMFLAG_ODB and then shuffle, so the final result is a LAM ODB.

<u>LAMFLAG_ODB:</u>
The input and output ODB for the program is the same, so it modifies the ODB given by the ODB_SRCPATH_ECMA and the ODB_DATAPATH_ECMA environmental variables. The only other input for the program is the namelist file called NAMELIST. The modified ODB is renamed from ECMA to ECMASCR for further processing.

<u>shuffle (modified):</u>
The input ODB for this program is ECMASCR, while the ODB output is ECMA (these are given in the ODB_SRCPATH_… and ODB_DATAPATH_… environmental variables). It is important to note that this program – except for the selection – is equivalent with shuffle so the change of the number of pools is also possible with it.

With the present versions of these programs it is necessary to go into the input ODB directory before execution, and launch the program from there.