Tomislav Kovacic

Report on stay in Meteo France
19/04/2004 - 29/05/2004

1. A task

1.1 Short description of task
- To create a branch and merge it with Yann Saeti's branch
- To create a pack
- To run ALARO-10 prototype with Kain-Fritch-Bechtold convection parameterisation for convective case. The GARD 12 –13th September 2000 case was chosen.

2. Preparation of program and changes in subroutines

2.1 Rules of my branches
```
> View : arp_mrpa661_CY26T1_alaro10
> Path : /u/marp/marp001/dev/arp
>
> Rule  Selection              Action
>  1. CHECKEDOUT
>  2. mrpa661_CY26T1_alaro10
>  3. mrpm637_CY26T1_arome1      [write to mrpa661_CY26T1_alaro10]
>  4. mrpm637_CY26T1_arome       [write to mrpa661_CY26T1_alaro10]
>  5. marp001_CY26T1_cy27    [write to mrpa661_CY26T1_alaro10]
>  6. CY26T1             [write to mrpa661_CY26T1_alaro10]
>  7. MAIN               [write to mrpa661_CY26T1_alaro10]

> View : ald_mrpa661_AL26T1_alaro10
> Path : /u/marp/marp001/dev/ald
>
> Rule  Selection              Action
>  1. CHECKEDOUT
>  2. mrpa661_AL26T1_alaro10
>  3. mrpm637_AL26T1_AROME       [write to mrpa661_AL26T1_alaro10]
>  4. mrpe721_AL26T1_bfnh        [write to mrpa661_AL26T1_alaro10]
>  5. marp001_AL26T1_cy27        [write to mrpa661_AL26T1_alaro10]
>  6. AL26T1             [write to mrpa661_AL26T1_alaro10]
>  7. MAIN               [write to mrpa661_AL26T1_alaro10]
```

2.2 Pack

The correct pack can be find in ~/mrpa661/pack/AROME1.

2.3 Initialisation of convection
- LKFBCONV was added to YOMARPHY and NAMARPHY
- LKFBCONV was added to SU0PHY

2.4 Changes in subroutines

2.4.1   SUBROUTINE AC_CONV_MNH
- Debugging
- Initialisation of PTTEN, PRVTEN, PRCTEN, PRITEN

2.4.2   SUBROUTINE BRI2ACCONV

- Added PPRTEN and PPRSTEN to arguments list and removed ZPRTEN and ZPRSTEN

2.4.3   SUBROUTINE APL_AROME
- Added ZCVTENDPR and ZCVTENDPRS (should be added to surface variables)

2.4.4   SUBROUTINE MF_PHYS
- PREPI is suspended and changed to ZPREPI. Corresponding array in CPG should be find and then PREPI can be put back to arguments.

3. Run of ALARO-10 km prototype

3.1 Script
A script used to run a prototype of non hydrostatic version of ALARO –10 with KFB parameterisation of convection for 12-13 November 1999 GARD case is in directory ~/mrpa661/GARD.

3.2 Results of run
 Only one run was done. It was terminated because the time limit was reached on one processor. The time step used in this run was 7.5 s, the same as the one used in AROME with 2.5 km grid, for sake of comparison. Forecasted time at the moment of run termination was about 2.5 hour. No post processing was done.