

Summary of discussion from WG on physics
Innsbruck ALADIN workshop, 3.6.2004
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The overview on the physics topics in last year can be get through many presentations at the workshop. So discussions were mainly oriented to the topics in ALADIN-2 scientific plan.

Training on AROME physics will be organized by GMME team in September/October. Training and inter-comparison (AROME-ALADIN) experiments (using the 1d models) on upper-air physics will attend Martina Tudor and Siham Sbi, for surface Laszlo Kullmann and Andrey Bogatchev, who will try to introduce the operational snow scheme in the AROME surface scheme. M. Tudor will focus on the stability and accuracy of AROME physics with long time-steps and control of robustness of parameterizations. L. Kullmann can later work on optimization of surface schemes for the lower-resolution configurations.

Work on ALARO prototype is going on, testing and comparison with ALADIN on various cases (orographic precipitations, low cloudiness, convection) is now in the row. T. Kovacic is going to help G. Hello during his visit in Toulouse.

Research and development on a 3d turbulent scheme is postponed to next year (2005).

Orographic drag and envelope

In ALARO there will be scheme without envelope, in current applications each center can decide to use it or not. Advantages and disadvantages can be found. J.-F. Geleyn will send mail.

Experiments with semi-envelope haven't show improvements.

Jure Cedilnik will go for stay in Toulouse in November to work on sub-grid scale orography parametrization of drag/lift in order to remove the envelope orography.

Deep convection

Martin Bellus is going to work on deep convection triggering

We were talking to have alpia experiment with ALADIN model to study orographic triggering for deep convection, maybe student in Portugal could be interested (M.Belo will investigate).

Shallow convection and low cloudiness

Further testing of the Xu-Randall cloudiness scheme with improved vertical profile of critical relative humidity and with optimized tuning.

Radiation

New version of radiation scheme (J.-F. Geleyn) has good results.
The work on more accurate transmission functions (from RRTM database) has started. Still a lot of work has to be done (cloud effects,...), volunteers are welcome.

Physics-dynamics interface

At the moment is the most important topic for ALARO-10 sub-project
Martina Tudor is already successfully working on it (consistent set of equations), Piet Termonia is starting (time-discretization), also Filip Vana is prepared to work on it.
Proposal from J.-F. Geleyn is to organize workshop in Prague in late autumn where HIRLAM people will be also invited.

Adaptation of the micro-physics parametrization to long time-steps in the next year, J.F. Geleyn will try to organize "networking".