

## Toulouse (24.-28.4.2006)

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The purpose of the travel to Toulouse/Météo-France can be pointed out as following:

- I. Fetching most recent developments in Lopez-microphysics
- II. Verification tool (ALADIN/etc vs. INCA)

### Ad I.

ALADIN CY29t2 was installed successfully at ZAMG in autumn 2005, first tests on orographic precipitation events brought promising results. It was put in parallel suite in December 2005. Due to unrealistic cloudiness fields it could not become operational. Several namelist settings were tested till early 2006 to improve cloudiness. After upgrading some physics- and setup routines (CY29t2\_op2) in March 2006 the cloudiness problem seemed to be solved and CY29t2(\_op2) was set in parallel suite again.

During the stay in Météo-France it turned out to be favourable to include further upgrading of Lopez-microphysics before proceeding towards operational CY29t2. The main aspects of the modifications include:

- tuning of collection and autoconversion processes
- splitting of prognostic variable  $q_p$  into  $q_r$  and  $q_s$  (p...precipitation, r...rain, s...snow)

Beside physics it is necessary to make modification in DFI-routines to avoid inconsistencies with GFL variables. These modifications are included in CY30t1, but it should not be necessary to install the newer export version at ZAMG. It should be possible to include them into CY29t2 without major problems. This is planned to be done soon at ZAMG in order to have optimal comparability with MF.

### Ad II.

In the context of the Amadeus-project, which will close at the end of the year, various meteorological models with different parametrizations should be compared with each other and above all with the high resolution precipitation analysis of INCA (Integrated Nowcasting through Comprehensive Analysis).

During the stay of Yong Wang and Franz Wimmer in Toulouse at the end of november 2005 the necessary software was developed. The journey this time was aimed to modify the software in a way to make it more flexible and to upgrade it with some additional statistical parameters (e.g. *Robert-fraction*).

The results based on two month (august and october 2005) had to be discussed with Eric Bazile, our co-operation partner at MeteoFrance.

Up to now the following can be stated:

- the 3D-Var-scheme used in France has a positive impact on the precipitation forecasts within the first 6-12 hours.
- the microphysical scheme of Lopez yields more smoothed precipitation fields and seems to lead to a better forecast for regions on the lee side of mountain chains.
- ALARO has problems with little amounts of precipitation, but all in all it seems to produce the best forecasts of all evaluated models.

In order to increase the statistical significance of the results, a further month (april 2006) is going to be investigated.