AIMS OF THE '«CONVERGENCE» DAYS'

(The ALADIN Programme Manager, Toulouse, 24-25/9/08)

- Upstream side; action at the crossroad between:
  - The decision of a specific session of Météo-France's CPPN (19/10/07) to launch a multi-range set of so-called «convergence» actions [*two 'suivi' meetings since, 17/12/07 & 21/4/08*];
  - The request of the ALADIN PAC'4 (19-20/5/08) to consider the scientific aspects of the above set of actions through a CSSI => 'Bureau' => General Assembly set of discussions.
- Means: see further viewgraphs.
- Downstream side; expected outcomes:
  - A clear snapshot of the situation, especially for **4 ongoing actions**;
  - Better borders between science (problem generating, if healthy) & algorithmic (solution by anticipation or cure, if well understood);
  - Planning (cost/benefit-based analysis of further work [*how many actions: 4+?*]; possible reorientations; deliverables & time-table).

TRYING TO SYNTHESISE THE «GLOSSARY»

- First a (slightly provocative) question: "do we share aims in ALADIN on 'physics'?" => PM's personal opinion: YES we ***share*** the ambition to have the best possible set of solutions for all scales and for all types of application, BUT we deeply disagree whether or not this must happen by ***sharing*** resources, starting with the very basic case of a 'physics/dynamics interface'.
- This paradox about 'what to share' leads to the search of less ambitious solutions applied at *various levels* in what might indeed be named "*combinazione*"!
- The above-mentioned various levels also have their specific slang: 'Interoperability ⊃ Transversality ⊃ Convergence'
- Historically: 2003-2004 … 2005-2006 … 2007-20xx
- We are here to see if the trend can be stopped or inversed!

AVAILABLE TOOLS

- The Agenda, which in itself (especially with the glossary) tells a lot about the WHYs and HOWs of today's occasion;
- Four well advanced documents (1 per action) which, even if originally not intended so, can be seen as 'preparatory';
- A questionment list (see later);
- The documents produced one year ago, on request of CPPN for its specific session (still relevant in high proportions!?):
  - *Facts, thoughts and perspectives about ALARO-0, mostly seen from the angle of existing or potential collaborative links with the ARPEGE, AROME (and HIRLAM) physics packages*
  - *Paths towards a convergence of the AROME and ALARO-0 physics (from the ALARO point of view)*
  - *Interoperability of physical parameterisations [NDLR: the CNRM point of view]*
- Some scientific results and/or statements (one would always wish more of this; will there simply be enough today?).

(POTENTIALLY) CONTENTIOUS ISSUES

- Where should the perimeter of the common AROME ⇔ Meso-NH part stop?
- What should be the definition of AROME, when seen in its potential use by the ALADIN partners of Météo-France?
- How should be the link between DDH budget computations and the prognostic aspects of the physics-dynamics interface?
- What is the potential of having a 'sub-grid microphysics' that may be tested with other characteristics of the ARPEGE and/or AROME/Meso-NH microphysics?
- What is the best methodology for the 'selective modularisation' of the Meso-NH microphysics in order to be called from an APLMPHYS-type algorithm?
- What should be a common strategy for a common transversal use of 'governing equations'?
- What to do with the 'non-Meso-NH dynamically compatible' options "delta_m" and "[p,T] compressible projection of the heat source/sink"?
- How to deal with the issue of 'falling cloud condensates', in case of reliance in AROME on the 'barycentric equations'?
- What is the best methodology for merging (if wanted) the most specific characteristics of 3MT with the science and/or the algorithmic of ARPEGE and/or AROME?
- Looking at the ensemble of codes running under the IAAAA software platform, what could be the primary target for the search of transversal solutions in physics?
- What is the primary target for physical components' interoperability?
- What is the perimeter within the 3MT development that CNRM should consider as useful to investigate?
- In general, how should the algorithmic partition of moist physics be organised?
- What are the links of all the above with the general issue of 'Interoperability', seen on a longer-range perspective of the NWP-trade evolution?

IDEM: Italic=transversal / Bold=wide reaching

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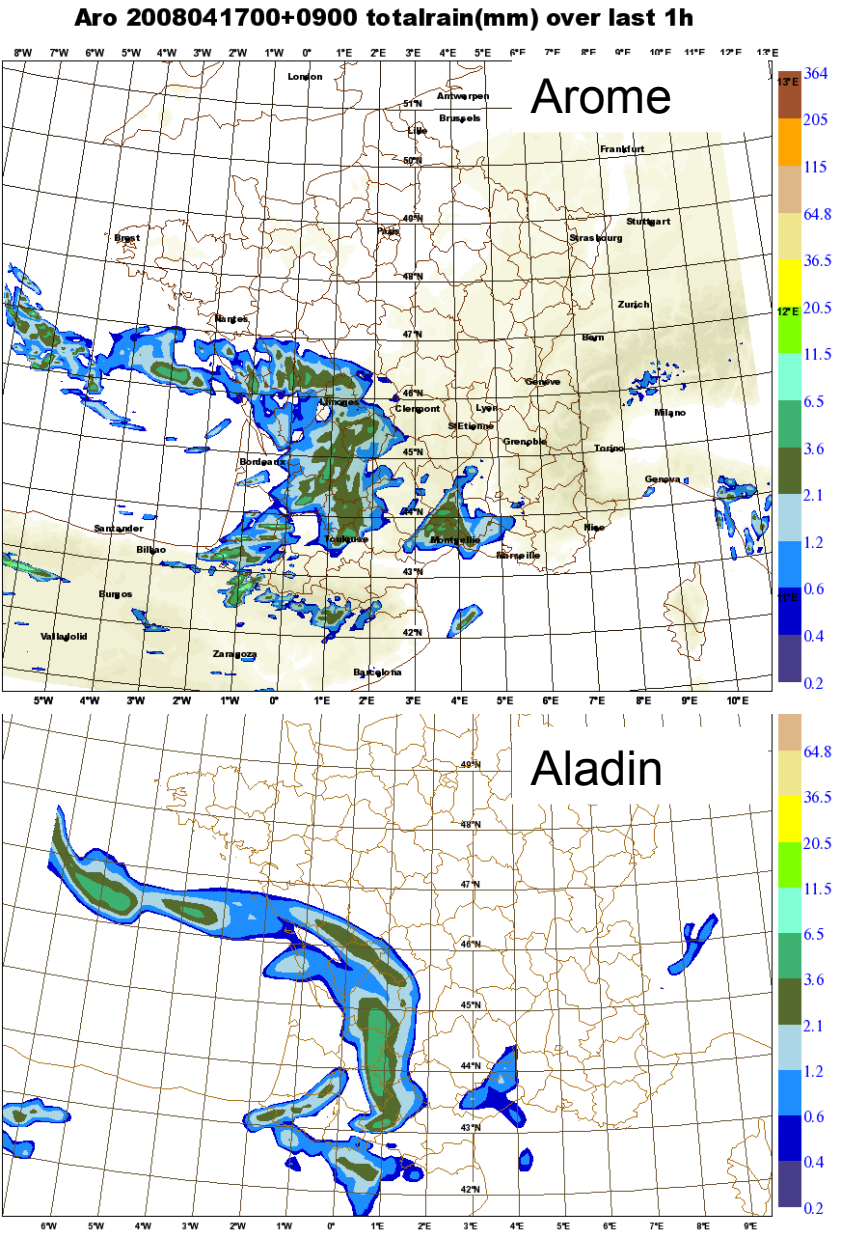
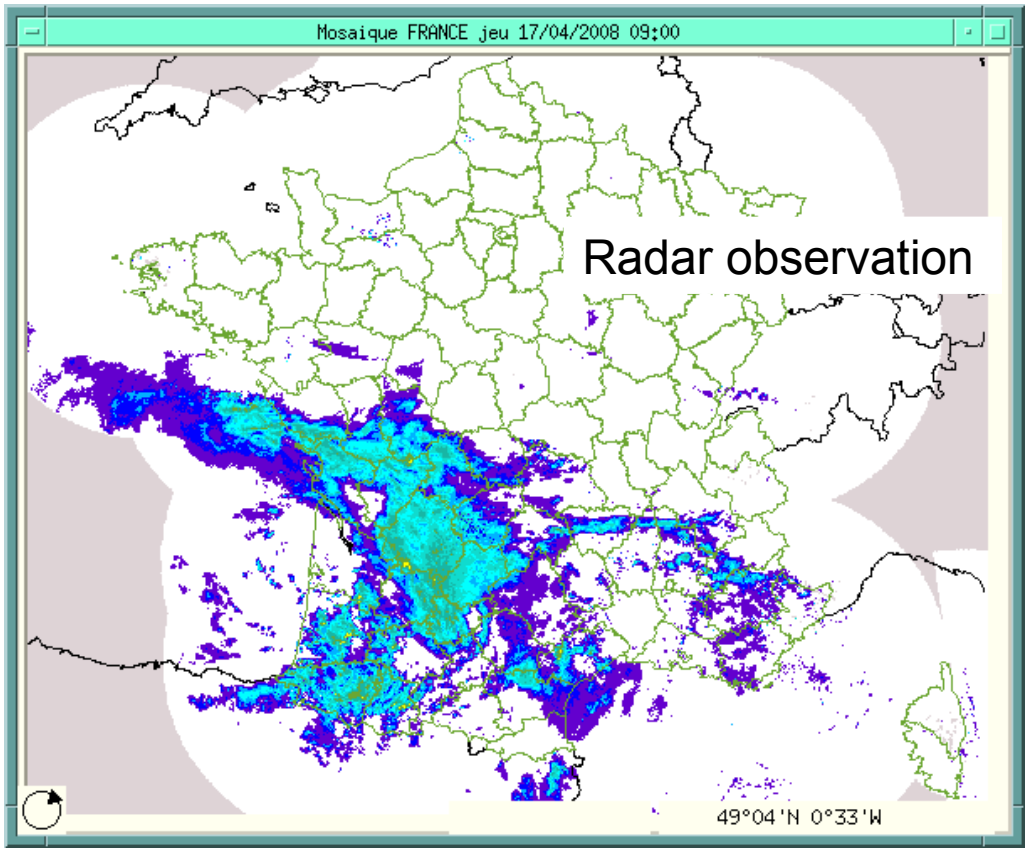
AROME's resolved convection : a deep change for products' perception and for verification





The 'application side' of the 'double penalty' syndrome for verification: details of AROME bring good information about the structure of the field but they might be more misleading about the life-cycles at small scale than their ALADIN counterparts at a larger

3MT's sampling of the 'grey-zone' (ALARO-0)

Diagnostic convection representation incompatible with 'grey-zone' scales

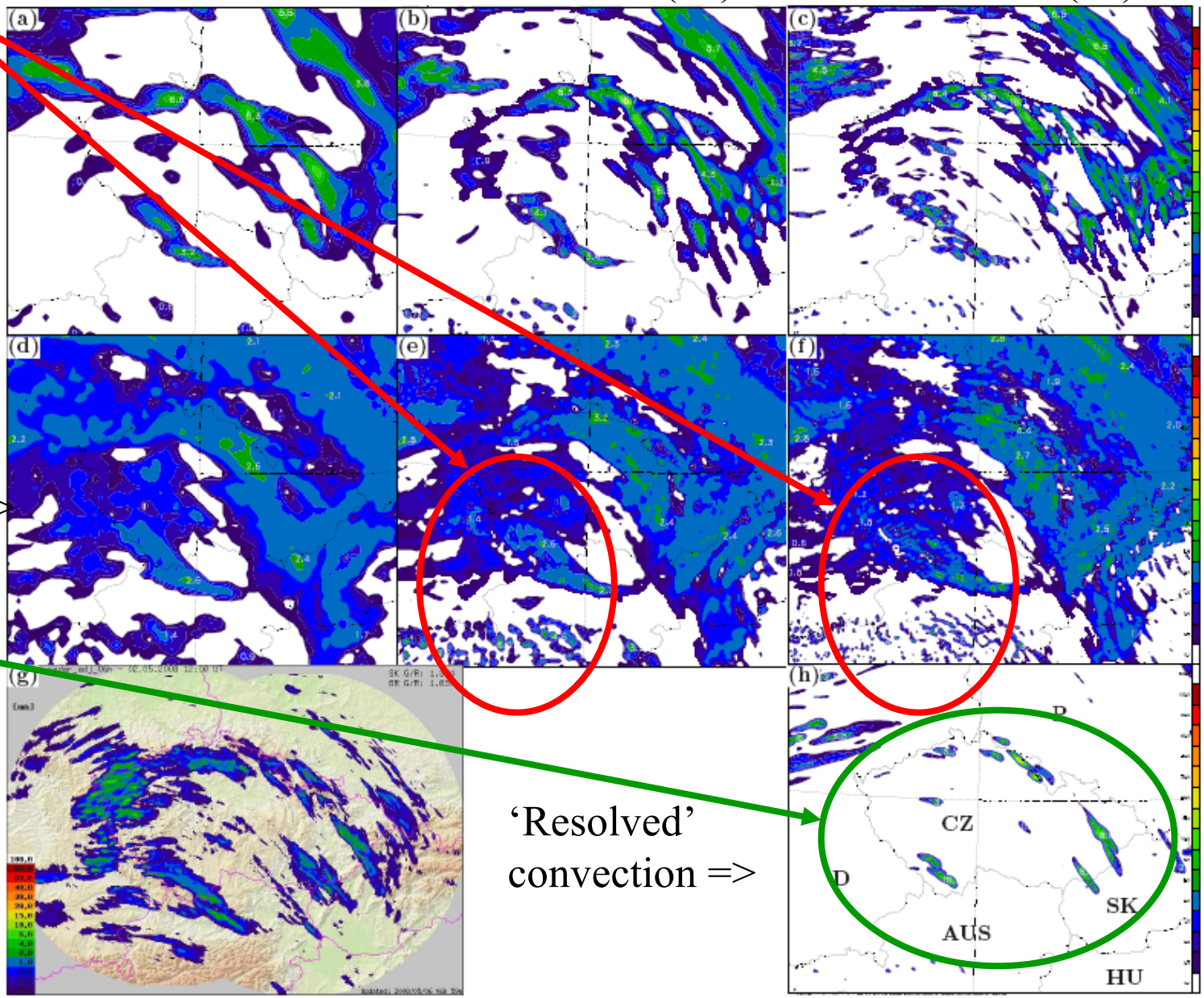
A0 with 3MT =>

A0 without 3MT =>

At least here and then, convection parameterisation is necessary for the 2.3 km mesh

Observed precipitations =>

'Resolved' convection =>



Why should we continue juxtaposing/comparing rather than combining/adapting our strengths?

Being in a curative rather than in a preventive mode should not forbid to take some risks in view of higher COMMON ambitions.

Who can the most also can the least!