4th **ALADIN** medium-term research plan : a short presentation

(2006-2008)

ALADIN

AROME

BACKGROUND

Ambitious (but sensible) targets for **operations** in 2008

      data assimilation

      improved physics

      higher vertical and horizontal resolutions

      first AROME implementations
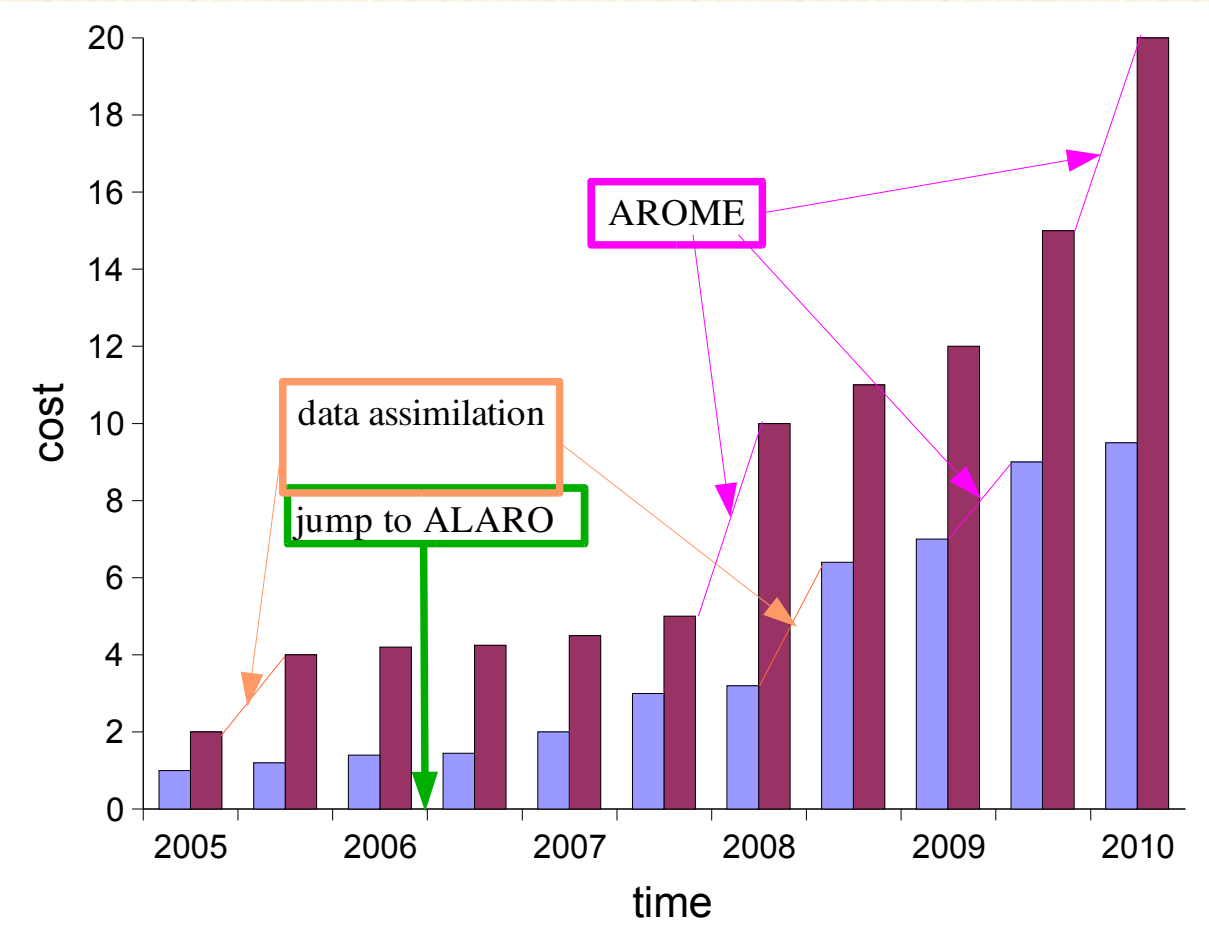
      more nowcasting applications

      common EPS

      ...

HIRLAM partnership

Decentralization of research

Evolution of operational suites : expensive vs cheap options

First guess :

A lot of work !

a large part of applied research : plug-in and validation ...

but not so straightforward : difficult scientific issues on the way !

Model core

Dynamics

some relief ...

Coupling

a difficult scientific problem :

transparent lateral boundary conditions in a spectral model

need for safe operational choices :

time dimension (coupling frequency) : *from 1999 !*

nesting strategy (coupling and initialization) :

when going to higher resolution

no rest !

Physics

a hot topic ! ~~NEW~~
a wide range of scales, a wide range of schemes ...
and many complains from forecasters !

⇨ a common interface to dynamics

⇨ common diagnostic and validation tools

*before playing with the toolbox
and addressing the many scientific problems*

DATA ASSIMILATION

very useful, and very demanding

increase with resolution for both !

a lot of work for a lot of observations

an agreement on the importance of

ensemble methods and variational techniques

3d-var as main target

but 4d-var addressed via code convergence with HIRLAM

going towards very high resolution is not a straightforward downscaling

SURFACE

New ! moved outside the NWP model (externalization)

➡ plug-in required at the beginning

use of higher-resolution physiographic data

evaluation or design of more realistic parametrizations

improvements in surface analyses :

> snow cover
> SST
> T2m, Hu2m
> soil moisture & temperature

PREDICTABILITY

VALIDATION

of increasing importance, but starting from 0 *(or close)*

TECHNICAL ENVIRONMENT

not to be neglected ...

+ all the problems not yet registered ...