

ALADIN : 2004-2005

Stormy days for the ALADIN partnership !

Problems of names



Problems of information / communication



Arguments on physics and interfaces



Clarifications !



Some comforting news



NAMES : which A ?

ARPEGE, ALADIN, ALATNET, AROME, ALARO, HIRLAM, ...

«In order to give equal weight to the 'reconvergence' and 'tool-box' pillars of our ALADIN-2 partnership, ALARO has to be considered as a *framework* not a model - enabling in the future each Partner to configure its LAM, based on its own choice of physics options, from ARPEGE to AROME/Meso-NH options, with possible intermediate choices.»

from the letter of A. Ratier to ALADIN directors, 17 March 2005

a unique software allowing to run several models with the widest range of options



ALARO



ARPEGE, ALADIN, AROME, HIRLAM, ...



About physics ...

How many physical packages : 1, 2, 3, 4, ..., ∞ , ?

➔ the ALARO-10 prototype : 2 ?

1 for LAMs, 1 for ARPEGE (testing Meso-NH physics at 10 km)

«despite higher computer cost, the 'ALARO-10' prototype does not produce better precipitation outputs than ALADIN, the micro-physics scheme is very sensitive to increasing time step and specific efforts are required on convection at intermediate scale» *(from the same letter)*

➔ the Split proposal : 3 ?

1 for AROME, 1 for intermediate scales, 1 for ARPEGE (only 1 for surface)

➔ pragmatism and compromises finally led to :

- refinements on 2 main packages + test bed for algorithmic problems

1 for AROME, 1 for larger scales (only 1 for surface)

- for the while, so as to ensure a wide range of combinations later

+ HIRLAM physics !

and interfaces ...

Physics / dynamics

reduced ambitions for the short-term

→ 1 common interface for all packages, compromises inside
work on equations pursued

Atmosphere / surface

1 interface / 1 package (code externalization)

adaptations required



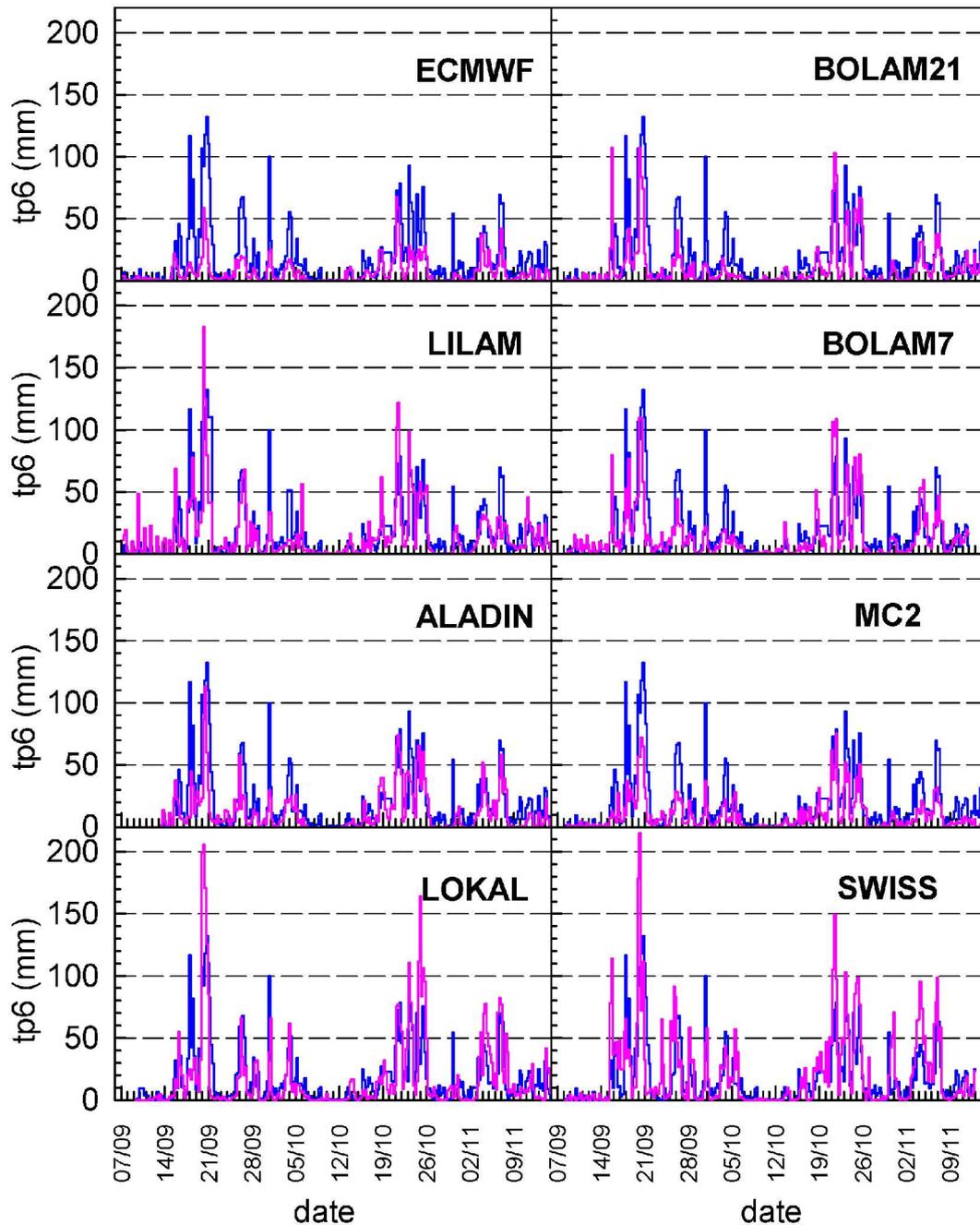
Difficult years, but ALADIN is more active than ever !

- ★ welcoming HIRLAM partners
- ★ more and more contributions to the Newsletters
- ★ increased participation to workshops
- ★ 8 candidates for a European Research Training Network
- ★ general update of operations successful
- ★ first operational ALADIN 3D-Var assimilation suite in May
- ★ first training stay on ALADIN for Algerian students

maximum TP 6h for day 2 (MC2 day1)

Rain gauge / Closest model point

Pedemonte et al, 2003



Performances of models along MAP : precipitations

(thanks E. Richard & D. Klaric)

mean bias over the SOP period

MESO-NH	+29%
MM5	+25%
MOLOCH	-21%
MC2	-30%
ALADIN	+17%
ARPEGE	+18%

Facing future :

- within a larger partnership :
 - close "code collaboration" with HIRLAM
 - more exchanges with research institutes
 - increased cooperation with hydrologists, climate modellers, ...
- with an ambitious but realistic program for research and operations
- with an efficient management structure
- without losing our cohesion and identity !

How ?

- Elaborating a new Memorandum of Understanding :
 - working group mandated by the Assembly of Partners (10/2004)
(J. Roskar, C. Blondin, A. Quinet, A. Horanyi)
 - first draft ready (04/2005) and sent to Directors

- Elaborating a new medium-term research plan (2005-2008) :
 - not so many contributions from teams !
 - first draft prepared by CSSI + nice volunteers
 - final version to be discussed during this workshop

- Strengthening the training and common maintenance efforts :
 - an unavoidable counterpart
 - a critical issue

Distribution of the 1998-2004 maintenance effort (excluding the French team)

% of the total *phasing* and maintenance efforts, including deported maintenance (after corrections !) and the *common verification project*

	1998		1999		2000		2001		2002		2003		2004	ave.
	phasing	maint.	phasing	phas.										
Austria	0.0	0.0	0.0	0.0	7.5	4.6	0.0	0.0	8.1	4.7	0.0	1.1	0.0	2.3
Belgium	6.3	3.1	3.0	14.0	0.0	4.6	8.1	13.5	8.1	3.5	11.6	6.7	8.3	8.8
Bulgaria	28.1	16.9	24.2	16.0	5.0	6.2	24.3	21.6	8.1	7.1	14.0	10.1	8.3	15.5
Croatia	9.4	4.6	9.1	6.0	20.0	12.3	8.1	5.4	0.0	5.9	14.0	13.5	13.9	10.9
Czech R.	6.3	3.1	6.1	4.0	17.5	12.3	10.8	6.8	13.5	10.6	2.2	2.2	16.7	10.5
Hungary	0.0	9.2	12.1	8.0	15.0	9.2	13.5	12.2	21.6	10.6	16.2	12.4	8.3	11.8
Morocco	18.8	18.5	24.2	16.0	0.0	6.2	0.0	8.1	21.6	10.6	14.0	13.5	0.0	10.0
Poland	0.0	4.6	0.0	0.0	5.0	12.3	8.1	10.8	8.1	8.2	7.0	16.9	8.3	5.4
Portugal	0.0	6.2	0.0	0.0	0.0	0.0	8.1	5.4	0.0	1.2	0.0	1.1	0.0	1.2
Romania	15.8	10.7	6.1	12.0	7.5	7.7	0.0	4.1	0.0	1.2	7.0	4.5	13.9	7.0
Slovakia	15.8	20.0	9.9	12.0	15.0	15.4	13.5	8.1	10.8	7.1	14.0	14.6	13.9	13.3
Slovenia	0.0	6.1	6.1	12.0	7.5	9.2	5.4	4.1	0.0	24.6	0.0	3.4	0.0	2.7
Tunisia	-	-	-	-	-	-	0.0	0.0	0.0	4.7	0.0	0.0	8.3	2.2
<i>total effort</i>	16.0		16.5		20.0		18.5		18.5		21.5		18.0	<i>p x m</i>

(1/12 = 8.3 %, 1/13 = 7.7 %)



Main common actions with HIRLAM along last year

the HIRALD setup at ECMWF

- open to HIRLAM and ALADIN users
- allowing to run a few ALADIN configurations
- more details in HIRLAM presentations !

joint workshops and meetings

- workshop on convection and cloud processes, *Tartu, January 2005*
- debate on data assimilation issues, *Budapest, November 2005*
- training on AROME, *Bucarest, November 2005*
- workshop on high-resolution modelling, *Oslo, December 2005*
- ...

and invitations

first discussions on common research topics



Operational ALADIN models

January 2005, update required !

Partner	Δx (km)	L	Δt (s)	Gridpoints C+I+E	Grid type	SW corner (lat, lon)	NE corner (lat, lon)	Coupling model
AUSTRIA	9.6	45	415	300 × 270	quadratic	33.99N, 2.17E	55.62N, 39.07E	ARPEGE
BELGIUM	7.0	41	300	240 × 240	linear	43.17N, 5.84W	57.25N, 17.08E	ALADIN-FRA
BULGARIA	12.0	41	514	90 × 72	quadratic	39.79N, 20.01E	46.41N, 31.64E	ARPEGE
CROATIA	12.2	37	5143	240 × 216	quadratic	33.99N, 2.18E	55.62N, 39.08E	ARPEGE
	8.0	37	27	180 × 160	quadratic	39.00N, 5.25E	49.57N, 22.30E	ALADIN-LACE
CZECH R.	9.0	43	360	320 × 288	linear	33.99N, 2.18E	55.62N, 39.08E	ARPEGE
FRANCE	9.5	41	415	300 × 300	linear	33.14N, 11.84W	56.96N, 25.07E	ARPEGE
HUNGARY	6.5	37	270	432 × 384	quadratic	34.15N, 2.35E	55.3N, 38.7E	ARPEGE
MOROCCO	31	37	900	300 × 300	quadratic	1.93S, 35.35W	44.86N, 57.22E	ARPEGE
	16.7	37	675	180 × 180	quadratic	18.13N, 19.99W	43.11N, 9.98E	ALADIN-NORAF
POLAND	13.5	31		180 × 180	quadratic	41.42N, 5.56E	61.16N, 40.19E	ARPEGE
PORTUGAL	12.7	31	600	90 × 100	quadratic	34.94N, 12.42W	44.97N, 0.71W	ARPEGE
ROMANIA	10.0	41		100 × 100	quadratic	41.91N, 20.68E	49.80N, 32.12E	ARPEGE
SLOVAKIA	9.0	37	400	320 × 288	quadratic	33.99N, 2.19E	55.63N, 39.06E	ARPEGE
SLOVENIA	9.5	37	400	270 × 256	quadratic	34.00N, 2.18E	54.82N, 33.37E	ARPEGE
TUNISIA	12.5	41	568	120 × 162	quadratic	27.42N, 2.09E	44.16N, 18.37E	ARPEGE