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La lettre d'informations

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Newsletter

Number 15 — April 1999 - June 1999

This Newsletter presents you the principal events concerning ALADIN during the quarter of year mentioned above. The news about work or events outside Toulouse are related with informations that you sent (for disponibility constraints, the "deported" work deals with the previous quarter).

So, reading this Newsletter, you will know everything about ALADIN activities (more precisely everything I was told about) between April 1999 and June 1999 (except for the work realized outside Toulouse : between January and March 1999).

Please do bring to my notice anything that you would like to be mentioned in the next Newsletter (number 16) before the 25th of September 1999.

Any contribution concerning announcements, publications, news from the ALADIN versions on workstations or on big computers, verifications results, ... will be welcome. This deadline is particularly important for the report of the deported work each representative should sent every quarter.

If needed, please contact :

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(from France, replace 33 by 0)

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(from France, replace 33 by 0)

E MAIL patricia.pottier@meteo.fr

http://www.cnrm.meteo.fr/aladin/

Main events

1. ALATNET Marathon

We took an opportunity to obtain significant funding for the ALADIN project from the European Community, through the 5th Framework Programme for Research and Development. More precisely, we applied to one of the 3 Horizontal Programmes, entitled "Improving human research potential and the socio-economic knowledge base", part A-1 "Research Training (RTN) Networks", which aims to support the training of young researchers and exchanges between teams.

The application to this RTN was, itself, a challenge : very short delays, rather thick EU documentation, quite different rules than those of the previous ALADIN-PECO or ALADIN-KIT, ...

For example :

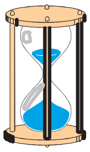
- 60% of the funding is to be devoted to long research stays for young scientists (visitors, either PhD or post-doctoral) in the leading centers;
- the rest supports exchanges between teams, visits, participations to workshops, ...
- the breakdown of the funding within the leading centers should also obey to different rules (including level of local grants, ...);
- ... various other rules and quotas appeared in the documentation and needed a VPP to be computed .. well, the VPP was not necessary but aspirin and an A3 size table !...

About the constraints :

- there need to be at least five institutions in the network (i.e. leading centers : receivers of the visitors), ready to offer good conditions for PhD or Post-Doc studies on ALADIN-related subjects;
- the visitors should not be coming from a country of these five institutions;
- this means that some NMS should have to be receivers only (of visitors and funds) and the other ones senders only (of visitors); moreover there will have to be an open competition for all the opened visitors positions, some candidatures from outside the ALADIN world having to be considered in fairness if received.

Of course, an human reaction would have been to give up but ALADIN is a magic project, isn't it ?

So, correspondents of eligible NMSs (all ALADIN partners excepted Croatia, Moldova and Morocco, not eligible for this EU application) were contacted on the 5th of May and an endless round of emails, fax, phone calls ... began.



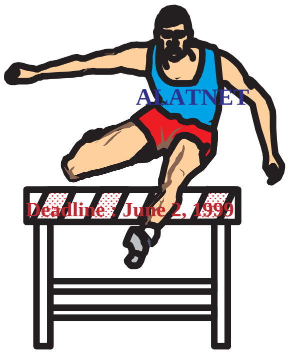
On 21st of May, the principles of our proposal were defined. Paperwork could begin. IRM was responsible for collecting all papers.

The first 15 pages flew to Brussels from Budapest, Ljubljana, Prague and Toulouse : they were administrative forms filled and signed by the 5 receivers :

- title and Proposal identifier : **ALATNET** (for **ALA**din **T**raining **NET**work)
- Partnership Summary :

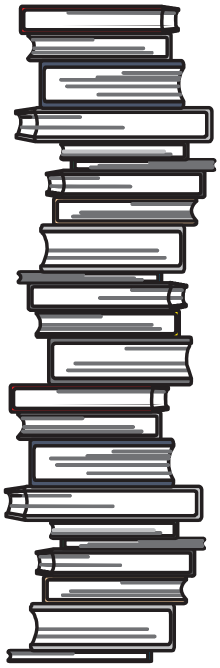
Coordinator : Meteo-France (Toulouse)

Partners: IRM (Brussels)
CHMI (Prague)
HMS (Budapest)
HMIS (Ljubljana)



- Proposal Summary
- Individual Participant Profile/Information

The other part (20 pages, mainly written by Jean-François Geleyn and Dominique Giard with informations from all partners) was an interesting exercise. It was the proposal description :



- research topic
- project objectives
- scientific originality
- research method
- work plan
- collective expertise
- collaboration
- organization and management
- training need
- justification of the appointment of young researchers
- training program
- ...

Everything was ready on Wednesday 2nd of June in the morning ... and deadline was Wednesday 2nd of June at 17.00 for deposit in EU Commission in Brussels !...

The package with the original and the photocopies of the proposal was delivered by Josette Vanderborght's hand to the EU Commission (a copy can be sent on request to the correspondants).

For the time being, we obtained in exchange an "Acknowledgment of Receipt". Hopefully, we will get something else ... in case of success, this funding will of course benefit to all ALADIN community, directly or indirectly.

The proposals will be evaluated by the EU during the summer; we will know more this autumn. Keep an eye on the "News" button of our server for latest news ...

2. *The new MoU : the end of a long journey*

The new MoU has been signed by all Partners after a 4 month travel with stop-overs at NMSs of the 14 countries involved in ALADIN project ... and visited in alphabetic order (see Newsletter 13).

3. *Cleaned cycle AL11 in Toulouse environment*

Cy21t1 and AL11 are now ready. it is important to switch quickly to this cycle. The intermediate cycle al10 is not supposed to be exported, though a version was installed in Prague for validation purpose only. **Forget about cy20/al10** !!

Since an important informatic cleaning took place between AL10 and AL11, it is not possible to leave branches on AL10 with the hope that somebody else will carry it on to the next full cycle. Therefore, everybody who has still interesting things up the leaves must move his developments on AL11. An automatic cleaning tool is available , for moving a branch nicely from 10 to 11.

Conferences/Workshops/Announcements

1. Next EWGLAM/SRNWP joined meetings

Does anybody notice that, in the last Newsletter, I announced the 22nd EWGLAM et 7th SRNWP joined meetings ... in October, in Bratislava ?... of course the numbers were wrong (date and place were right). Concerning the next next meetings, it would be in October 2000 in Toulouse (may be, it is the reason why I made the mistake ... I am already thinking about this hard autumn 2000).

The 21st EWGLAM & 6th SRNWP meetings will take place in Bratislava on October 11-15, 1999. The official invitations have been sent (deadline for sending registration forms was July 15 ... so, it is more than urgent now !..). Tentative schedule of the meetings :

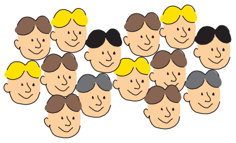
EWGLAM	SRNWP
11th - 12th October	***14th - 15th October (2 half day)***
Group presentations	Annual Report of the Co-ordinator for NWP matters
National status reports (countries NOT represented by the international groups)	Discussion about the Annual Report
Introduction to the posters (countries represented by the international groups	Report of the Leading Centres/Groups with discussion
Poster session	Other activities (among other EUCOS)
Scientific presentations ("special topics")	Planning of the 1999-2000 activities for the Network
	Final discussion
13th October	***14th October afternoon***
Scientific presentations	Excursion to the castle Cerveny Kamen
Computer vendors presentations	
Final EWGLAM discussion	

Participants who want to prepare their visit could use this picture of Bratislava ... as a first guest (it was painted during the 18th century); a compilation with more recent informations is strongly advised : please write to ***EWGLAM@mail.shmu.sk*** or consult ***http://www.shmu.sk/ewglam***.

2. Seventh ALADIN Workshop to be held in Ljubljana on November 17-19th, 1999

The subject of this workshop is "Recent and planned operational exploitation of ALADIN model". More details can be found in the last Newsletter (deadline for receiving abstracts was end of June, so ...).

For additional information please contact: aladin.workshop99@rzs-hm.si or consult http://www.rzs-hm.si/OpTiM/lace/workshop99.html

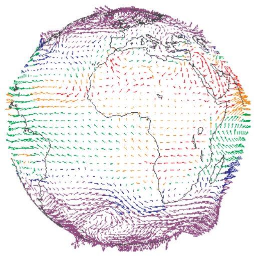


3. Assembly of ALADIN Partners

The next Assembly of the ALADIN Partners will take place in Lisbonn probably on Monday 22nd of November 1999. An invitation will be sent to the Directors of the 14 NMSs involved in the ALADIN project.

For additional information please contact: mario.almeida@meteo.pt

4. "Atelier de Modélisation de l'Atmosphère" (A.M.A.) to be held in Toulouse on November 30th - December 2nd, 1999



This year, the main topics of the A.M.A. will be "Modèles". A "call for contributions" has been sent in June within the French speakers community (communications and posters will be in French).

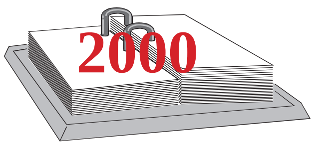
For additional information please contact : ama99@meteo.fr or consult http://www.cnrm.meteo.fr/ama/

5. SNRWP Workshop on Non-Hydrostatic

The third International SRNWP Workshop on Non-Hydrostatic modelling in Offenbach (25-27th of October, 1999) will focus on "Data assimilation for fine mesh models".

Please contact jsteppeler@dwd.d400.de or claude.fischer@meteo.fr who will attend the workshop

6. ALADIN workshops in



During last ALADIN workshop in Bucarest, next modeller meeting was proposed to be held in Poland by M. Jerczynski (February-April 2000).

Belgium also has candidated and could organize then the next forecaster meeting (presumably in fall 2000).

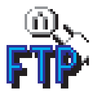
Contacts & Informations

1. *ALADIN on the Web*

These informations (and many many others ...) are available on our ALADIN server :

http://www.cnrm.meteo.fr/aladin/

2. *Public ftp*

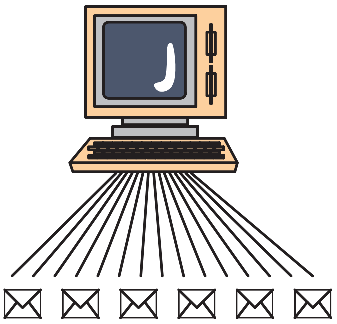


Some documents (please see the list of the documents in annex) are also available on a public ftp : ***cnrm-ftp.meteo.fr***, under the directory ***/pub-aladin***. Please connect on user anonymous and use you e-mail address as your password.

You can access to the postcript files on this public ftp also through the web server with : ***http://www.cnrm.meteo.fr/aladin/contact/ftp.html***

3. *Mailing lists*

Some mailing lists also exist to make our correspondence smoother; for example :



- the general list : ***aladin@meteo.fr***,
- the RC LACE list : ***aladin_lace_talk@chmi.cz***,
- the AWOC list : ***awoc@meteo.fr***,
- the list for questions and/or problems encountered with ALADIN : ***alabobo@meteo.fr***,
- ...

4. *Remote access to Météo-France machines : attention !!*

Many of you have a remote access to Météo-France machines. Autorizations for these access must be yearly renewed. Eric Escalière (*eric.escaliere@meteo.fr*) is your only point of contact for these access.

The Toulouse "garde-barrière" will be replaced by a new machine this automn. **The connection procedures should be modified**. People with remote access to Météo-France machines will be warned : please do pay attention to this future message otherwise you could no longer have access to Météo-France machines.

5. Users on Météo-France machines : attention !!

We have reached the maximum threshold for data storage on VPP (dino) and archiving system (delage) for the GMAP users (mrpa, mrpe, mrpm). ***PLEASE SUPPRESS USELESS FILES*** ! and thanks to the very few who answered to the first warning.

Money Funding asked for some cooperations based on the ALADIN project

1. French "Ministère des Affaires Etrangères" support (MAE)

Decision has been finally taken by the Ministery. Most of our requests were accepted except for countries who had already reached the limit of possible funding by the Ministery (there are limits on the total amount of money given to each country by the Ministery during one year whatever the domain of financing may be).

The stays on this support will be organized as soon as the money will be available (i.e. end of September or October).

More details can be asked to Arlette Rigaud (Météo-France/DGS/IE, arlette.rigaud@meteo.fr).

2. Bilateral supporting grants

Balaton, Barrande, Proteus, Portugal are bilateral programs who can support short visits in both sides. The countries involved in these programs can easily be guessed considering the programs names. The French fundings are used to pay the per-diem (in France) of the visitors and to pay the travel of French people to your NMS, and vice-versa.

Most of the exchanges are planned between September and November 1999.

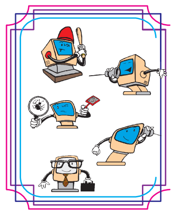
3. *Météo-France support for maintenance*

Part of Météo-France for funding to support maintenance actions in the ALADIN project has been used for AL10 phasing in January and February. Any volunteers for the next one in October-November (model) or in December (assimilation) ?...

The (pre-) operational ALADIN models

Very few contributions in this holiday period ... correspondents are strongly requested to send their contributions for the next Newsletter and anybody who needs some informations should contact them directly on the below addresses.

1. *AWOC*



Last news in Newsletter 14.

2. *Workstation version at Austrian Meteorological Service*

(more details thomas.haiden@zamg.ac.at)

Last news in Newsletter 12.

3. *The operational implementation of ALADIN-Belgium*

(more details olivier.latinne@oma.be)

Last news in Newsletter 13.

4. *Workstation version at Bulgarian Meteorological Service*

(more details valery.spiridonov@meteo.bg)

Last news in Newsletter 13.

5. *Operational ALADIN-FRANCE in Météo-France*

(more details francis.pouponneau@meteo.fr)

Last news in Newsletter 13.

6. *Workstation version at French Meteorological Service*

(more details jean-marc.audoin@meteo.fr)

Last news in Newsletter 13.

7. Workstation version at Hungarian Meteorological Service

(more details horanyi@met.hu)

The main events during the second quarter of 1999 were related to the migration of the ALADIN/HU operational application from the DEC 600 Au Personal Workstation to the SGI ORIGIN 2000 computer (with 8 processors).

This work was carried out in two consecutive steps:

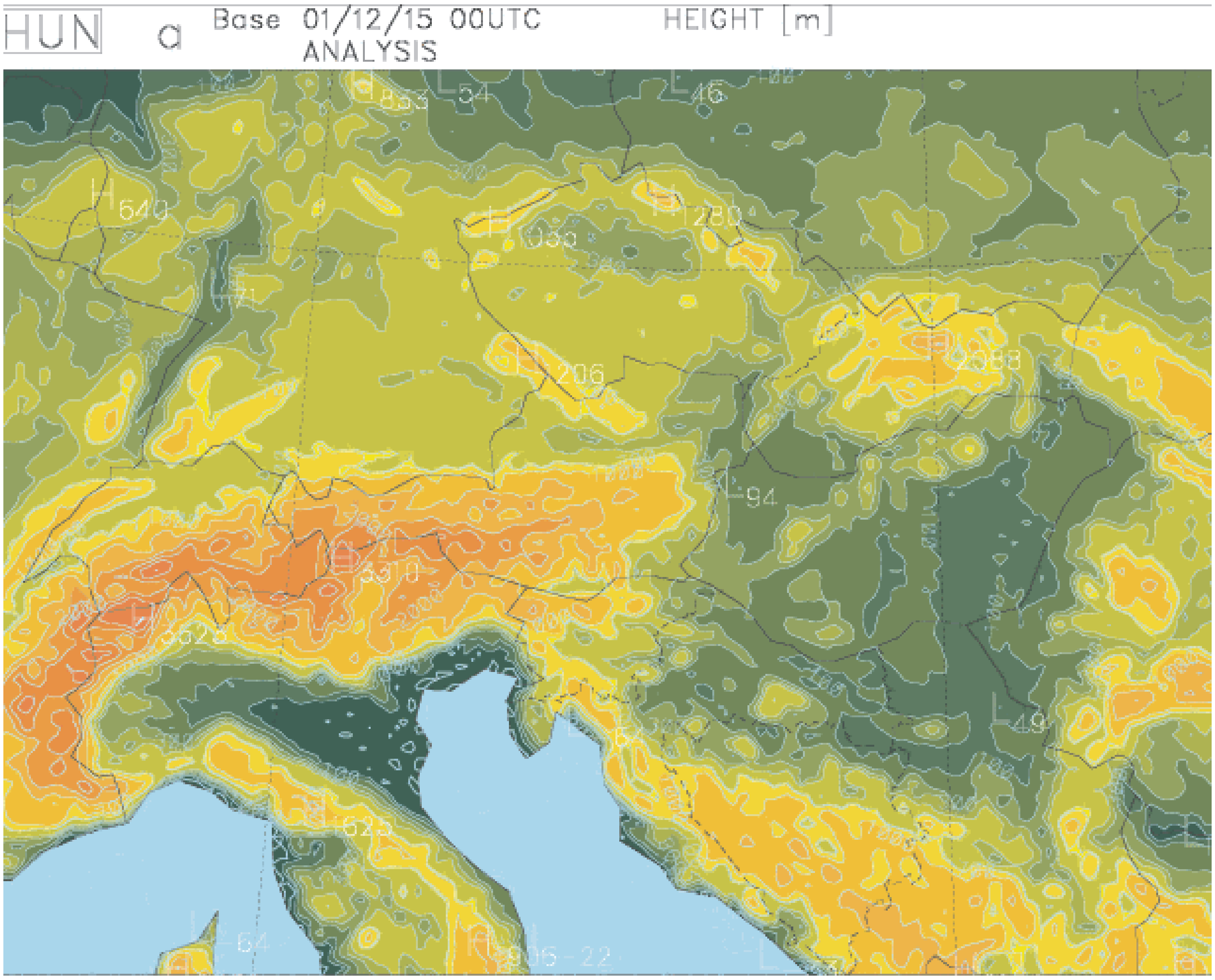
- 1. Since 20th of April, 1999 the operational model (keeping the same horizontal resolution -- 10km --) was put into operations on the SGI platform. It was ensured that the results were quasi-identical as those for the DEC machine.
- 2. The second step was the increase of domain size and horizontal resolution in order to benefit from the enhanced computer power of the ORIGIN 2000 machine.The new resolution became about 8 km (having 200 * 144 points) with the significant extension of the domain especially to the West (now the domain almost covers the envelope domain provided by ALADIN/LACE as initial and boundary conditions for the workstation version applications). The new domain with its orography can be seen in the enclosed figure.

The porting of the additional softwares related to the model (e.g. preparation of meteograms in table form, preparation of netcdf output files, verification, etc.) is also started but not yet finished, therefore for the time being some auxiliary tasks are still carried out on the DEC machine.

There was also some work performed in the framework of a bilateral collaboration between Slovenia and Hungary as far as the CANARI optimal interpolation scheme is concerned (during the visit of Neva Pristov in Budapest):

- The CANARI sustem implemeted on the SGI machine was ported to the Slovenian DEC Alpha station.
- Some preliminary data assimilation cycle experiments were tested using the CANARI OI scheme.

Finally it is noted that we are still using AL09 for operations together with the convertor needed for removing the field related to soil freezing from the initial and boundary conditions.



8. *Operational ALADIN-LACE in CHMI*

(more details can be asked to Project Leader or Prague Team Leader)

<u>Evolution of the ALADIN/LACE application.</u>

The only scientific change of the application concerned the modification of the soil scheme to describe better the freezing/melting processes of soil water. This change is supposed to improve namely the forecast of the surface soil temperature, also influencing seriously the forecast of 2m temperature (c.f. the cases of bad 2m temperature forecasts last winter). So, when winter will ask us what we have been doing in summer, we are supposed to be ready. The change is known under the namelist variable "LFGELS". The "LFGELS " modification has been put into the operations on :

26/05/1999 for 12 UTC network time (LFGELS bugfix on the cycle AL09/CY19T1/XR19)

with expected neutral results when tested before in a parallel suite. Since the change of soil scheme meant a change also in the coupling files (new reservoir of soil ice at the soil surface), the operational introduction was concerted and took place simultaneously in ARPEGE and in many of the ALADIN applications. The change of the scheme has already been described elsewhere and it shall not be repeated in this report.

<u>Parallel Suites</u>

The Prague Team launched the following parallel tests to assess the impact of different modifications:

1. Test of the LFGELS code, with neutral scores, as expected.

2. Test of the L2TLFF: a more precise computation of the Coriolis advection term (under key LADVF) in the two-time-level semi-Lagrangian scheme. This suite was very short, since the scores got quite worse, indicating the presence of a bug in the L2TLFF formulation as coded recently in ALADIN.

3. Start of the family of parallel suites to validate the new cycle AL11/CY21T1/XR21 released at the end of May.

The results of parallel suites may be consulted on the RC LACE web pages: www.chmi.cz/meteo/ov/lace/aladin_lace

<u>Research & Development:</u>

- Data assimilation related development: Blending of spectral fields.

The blending has been the most important research and development action, which has started at the end of June. The idea of blending has been known since the first trials done by the Toulouse Team in 1997: the goal is to create an initial state by blending the ARPEGE analysis (supposed to provide correct large scales) and the ALADIN forecast (used like an analysis guess, supposed to preserve some small scales features resolved by ALADIN but not present in ARPEGE analysis). Two years ago the results made with blending showed rather neutral, even slightly negative results. One of the reasons of such results was very probably the long cycling interval of 12 hours. Meanwhile, the strategy how to make the blending was thought over and a new scheme was proposed for the current study. First, the cycling is made exactly in the same way like for the assimilation in ARPEGE. It means that there is now a 6-hour blending cycle relying on the ARPEGE assimilation cycle files. To be precise, the blending "assimilation-like" cycle is based on the long cut-off ARPEGE analysis and it is independent from the so-called production forecasts (the usual operational runs going to +48h). The initial state to start the production forecast is thus based on the short cut-off ARPEGE analysis. It means, that for our two main network times at 00 and 12 UTC there are two blending events: i) the real time one based necessarily on the short cut-off to provide the initial conditions for the production forecast, ii) the one done as late as possible before the next production event, based on the long cut-off and providing the initial conditions to run the 6h assimilation forecast (the long cut-off analysis of ARPEGE has got the maximum observations available). Further, the blending event itself, which may be looked at like an analysis event without observations, is now conceived in the spirit of the incremental method. The "increments" are computed at much lower resolution, corresponding to the ones of ARPEGE analysis. Both ALADIN guess and ARPEGE analysis are projected to this low resolution, however, before making the subtraction; the fields are filtered by DFI in order to extract from them a noise-free signal. The increments are computed afterwards and projected back to the high resolution grid. The final sum of the ALADIN guess and the increments is made in the way to keep the long waves from ARPEGE analysis, which we suppose to be correct:

Blended ALADIN state = ALADIN_6h_guess + (DFI'(ARPEGE_ analysis) – DFI'(ALADIN_6h_guess))_inc

Where the prime at DFI means that it is applied at lower resolution. At the beginning of the integration, the obtained blended state is still subjected to the classical initialization by DFI contrary to the "incrementa DFI" technique used in ARPEGE, since here the sum of fields may be still a bit too noisy. The first results of this very interesting study shall be reported in the next newsletter. More details can be asked to Dijana Klaric and the rest of the blending team (Martin Janousek, Gabor Radnoti, Radmila Bubnova and Jean-Francois Geleyn).

- Developments in the physics.

  Within April, a part of the tuning of new convection scheme started in Prague. It was the work of Martin Bellus, devoted to the new computation of the saturated adiabatic state and its tuning. For Martin Bellus it was also a useful training, since he was a newcomer. Apart from this development, some little studies concerning the convection were attempted but so far without concrete results yet, mostly due to the fact that stagiaires came for an extremely short time to Prague Team.

- Developments in the dynamics.

  The bug in L2TLFF formulation in ALADIN was found (it was reported on alabobo mailing list and the correct code is available since the cycle AL11/CY21T1/XR21). A parallel suite is planned in July. Further, Filip Vana has ported successfully the environment of his PhD work to Prague and continue to do experiments. His tool has been taken over by David Dvorak, who is going to use it for tests of the operational choices in the semi-Lagrangian scheme.

- Developments in the diagnostics.

  A new tool for computation of some stability indices has been developed (Harald Seidel). This tool works on the fullpos files and the results are added to the input file. It was conceived for a possible future use in diag.pack (analysis + fullpos (making already some diagnostics) + other diagnostics computed from the results of fullpos).

- Developments in the verification.

  The functions verif.pack program were enlarged by the possibility to compute moving averages (Klaus Stadlbacher). The verifications of the whole period from the start of the operations in Prague is under computation. It is hoped that in the next newsletter we may publish long time scores including their evolution.

- Technical developments.

  A considerable effort was put to the creation of local CMAFOC files, in order to process locally the SYNOP and TEMP type of data (Zuzana Huthova). Tests with respect to Meteo-France database will start at the end of summer. Major improvement was done also on the source code management tool MaK, regarding generation of a correct list of dependencies on modified modules (Filip Vana). Other useful R & D tools were ported to Prague or developed (fortran2html, ectoplasme, EDF, GVALAG, GVAGP, see RC LACE web pages for more details).

- Work on documentation.

  The documentation to the first version of verif.pack is ready. Another piece of useful documentation on the Prague Team R & D environment is under construction: Prague Team Member Handbook. All these documents are available on the RC LACE web pages (see the address above).

9. Operational ALADIN-MAROC in MAROC-Météo

(more details mehdi.elabed@meteo.ma)

Last news in Newsletter 12.

10. Workstation version at Polish Meteorological Service

(more details zijerczy@cyf-kr.edu.pl)

Last news in Newsletter 14.

11. Workstation version at the Portuguese Meteorological Service

(more details mario.almeida@meteo.pt)

Last news in Newsletter 13.

12. Workstation version at the Romanian Meteorological Service)

(more details cordoneanu@meteo.inmh.ro)

Last news in Newsletter 12.

13. Workstation version at Slovak Meteorological Service

(more details olda.spaniel@mail.shmu.sk)

Since March 1999, workstation version of ALADIN/SLOVAKIA is running on upgraded machine: DEC station XP1000 with EV6 processor, 640 MB of memory and 12 GB disk space.Two runs per day (00 and 12 UTC) are operational from June 1999. There is one new product provided for Central Forecasting Office and aviation forecasters based on WS version ALADIN/SLOVAKIA: meteogram for thirteen stations over Slovakia.

We also plan to prepare some vertical cross-sections from ALADIN/SLOVAKIA model outputs, using ASCS program with improved graphics, and to increase our integration domain in the near future.

14. Workstation version at Slovenian Meteorological Service

(more details jure.jerman@rzs-hm.si)

ALADIN/SI operational report, April - June 1999

OpTiM group, Hydrometeorological Institute of Slovenia

During the abovementioned period the model has not undergone any changes. Routinely two daily runs using AL09 have been produced with standard disponibility.

Porting to the cluster of workstation under Linux starts to be in its final phase due to the new, only recently available Compaq Fortran-90 β compiler for Linux. The code compiles relatively fine but the execution suffers from some yet unrevealed bugs, either inside the code or in the compiler itself.

PhD Studies

The former RFR no longer exists but PhD studies go on in Toulouse or at home ...

1. Doina BANCIU : "Specific small scale diabatic forcing in ALADIN at the limit of the hydrostatic assumption" :

Report in the previous and ... in the next Newsletter.

2. Ilian GOSPODINOV : "Conservation Properties of 2 Time Level semi-Lagrangian" :

Report in the previous and ... in the next Newsletter.

3. Filip VANA : "The dynamical and physical control of kinetic energy spectra in a NWP spectral semi-Lagrangian model"

Report in the previous Newsletter.

4. Mark ZAGAR : "Prediction of small-scale events through second level dynamic adaptation of the planetary boundary layer"

Report in the previous Newsletter and PhD to be submitted till the end of 1999. More details at that occasion.

A step to the local use of orography in higher resolution : testing configuration e923 on DEC workstation

(more details neva.pristov@rzs-hm.si)

The complete version is on delage: ~mrpe691/report/c923/report_923WS.ps

There is an interest to make possible preparation of ALADIN climatic files at remotely located centres and in next step to include local data in higher resolution.

In this article first some basic information about configuration 923 is given, then all required input files for each step are listed. Modifications for running this configuration on workstation are described. Finally the results obtained on workstation are presented.

We can conclude that configuration e923 can run on other platforms. For this few changes in the code are maybe necessary and enough disk space is needed for all required input files.

1. Basic information about configuration e923[1]

Configuration e923 is a procedure, which interpolates climatic information from global fields into an arbitrarily chosen limited area. It creates the so-called clim files, containing the following 2D grid point fields:

- constants describing orography
- constants describing surface, soil, vegetation, which may be monthly dependent fields
- monthly climatological values for soil or surface variables

A clim file is created in 3 to 6 steps:

- step 1 - definition of orography
- step 2 - definition of surface, soil and vegetation characteristics without annual cycle
- step 3 - definition of monthly climatological values, modification of albedo and emissivity according to the climatology sea-ice limit
- step 4 - definition/modification of the vegetation and surface characteristics
- step 5 - modification of fields created by step 2 or 4 over land from high resolution datasets (for each month)
- step 6 - modification of climatological values

The first 4 steps are required for the ISBA surface scheme. For the non-ISBA case the first 3 steps are required and the input files for step 2 differ. Steps 5 and 6 are usually performed.

[1] more you can find in ARPEGE documentation where e923 is described

2. How to run configuration e923

For each step a special namelist is needed, they are almost the same except for the value of N923 in NAMMCC, which is changing according to step, and in namelist for step 5 information about local database is added in NAMCLI. Each step different files with corresponding data are read. The output fields written in file Const.Clim can be in any projection or in lat./lon. grid. This is determined with the definition of geometry in namelists. The master program is run without options. Steps 4 to 6 have to be run for each month.

For each step different files with corresponding data are required. They are listed in table 1, here follow information from which base data are prepared and where the files on delage can be found.

Table 1: List of all input global fields with some additional information about size of file, number of bytes per data, number of points and resolution of global data. In one box are files for one step for ISBA case.

file	size (bytes)	Nb bytes per data	points in lon.	points in lat.	resolution (deg.)
Water_Percentage Oro_Mean Sigma Nb_Peaks Urbanisation Dh_over_Dx_Dh_over_Dy Dh_over_Dx_square Dh_over_Dy_square Hmax-HxH-Hmin_ov4	37324800 74649600 74649600 37324800 37324800 149299200 149299200 149299200 149299200	1 2 2 1 1 4 4 4 4	8640	4320	0.042
itp_GL alb_GL emi_GL dps_GL arg_GL sab_GL vgx_GL dpr_GL	518408 *8 =4147264	8	360	180	1.
N108_GL	29180736	8	432	216	0.83
z0v_GL alv_GL rsm_GL veg${MM}_GL lai${MM}_GL	518408 *27 =13997016	8	360	180	1.
alv_HR dpr_HR itp_HR msk_HR rsm_HR vgx_HR z0v_HR veg${MM}_HR lai${MM}_HR	2889608 *31 =89577848	8	860	420	0.1
rel_GL snl_${MM} tpl_${MM} tsl_${MM} wpl_${MM} wsl_${MM}	230408 *61 14054888	8	240	120	1.5

- Step 1

  Datasets are prepared from GLOBE25 data in resolution 2'30''

  Input data are on directory:

  /home/m/mrpe/mrpe603/RELIEF_G/GLOB95

- Step 2

  Datasets are prepared from different sources (Meteosat, NOAA-4, CLIMAP, ISLSCP, climatology from Webb, tables, classifications Wilson &Henderson-Sellers, Mahfouf)

  Input data are on directory:

  /home/m/mrpe/mrpe603/SURFACE_G/version1/i3e

- Step 3

  Datasets are prepared from US Navy data, CLIMAP, climatology from NCAR, AMIP

  Input data are on directory:

  /home/m/mrpe/mrpe603/N108/i3e

- Step 4

  Datasets are prepared from Henderson-Sellers classification + tables

  Input data are on directory:

  /home/m/mrpe/mrpe603/SURFACE_G/version1/i3e

- Step 5

  Datasets are result from the combination of a AVHRR-derived vegetation mapping over Europe and the ESA forest mask. The initial data have a resolution of 2 km but have been interpolated onto a regular 0.1°x0.1° grid. The area is ELATSW=30°, ELONSW=-25°, ELATNE=72°, ELONNE=61°

  Input data are on directory:

  /home/m/mrpe/mrpe603/SURFACE_L/EUROPEb_v1/i3e

- Step 6

  Datasets were created from one-year assimilation experiment performed with ARPEGE and truncation T79. This was necessary to obtain climatological values consistent with ISBA and the new vegetation.

  Input data are on directory

  /home/m/mrpe/mrpe603/CLIM_G/version1/i3e

3. Code for DEC workstation (cycle AL09.07)

Changes in code

Besides other changes which are already done for configurations ee927, 001 and fullpos (see reports from Radnoti, Jerman or Spaniel), some additional changes related to reading of binary files are needed. The only problem appears in reading input files for step 1 in eincli1.F because on DEC record length in direct access files is given in units of 4 bytes.

eincli1.F : IARRAY32 is integer*4

by opening binary files RECL should be divided by 4

```
OPEN(31, FILE='Water_Percentage', ... , RECL=NDATX/4)
```

Local domain

The first step of configuration e923 can be run also on data set for local domain (LGLOBE=.FALSE.), not just for the data for whole globe (LGLOBE=.TRUE.). In order to be able to run it on local domain with the version Al09 routines gtoptx2.F, gtoptxy.F, gtopty2.F, locmaxi.F,eincli1.F, einter1.F prepared by E. Cordoneanu (December 1996) should be included (phased).

This is very useful for workstation version. Files for step one with data over whole globe are very huge. From them data for domain (a little bigger than for clima file) can be extracted. For detailed descriptions see the complete version.

Spectral fit of orography

In the export version of the code routines for minimizations in variational method are not included. They are needed if LKEYF=.TRUE. when variational method is used for spectral representation of the earth topography. For non commercial use following routines which are needed can be used: m1qn3.F m1qn3a.F ystbl.F mlis0.F dds.F dd.F.

Results

Orography fields obtained on Fujitsu or on workstation are the same in the case without spectral fit of orography. When this method is used there are some differences in values, because of different calculations. On Slovenian domain the highest difference is around 150 m (see figure 1). Other fields in clima files, which are connected to the orography, also show some differences.

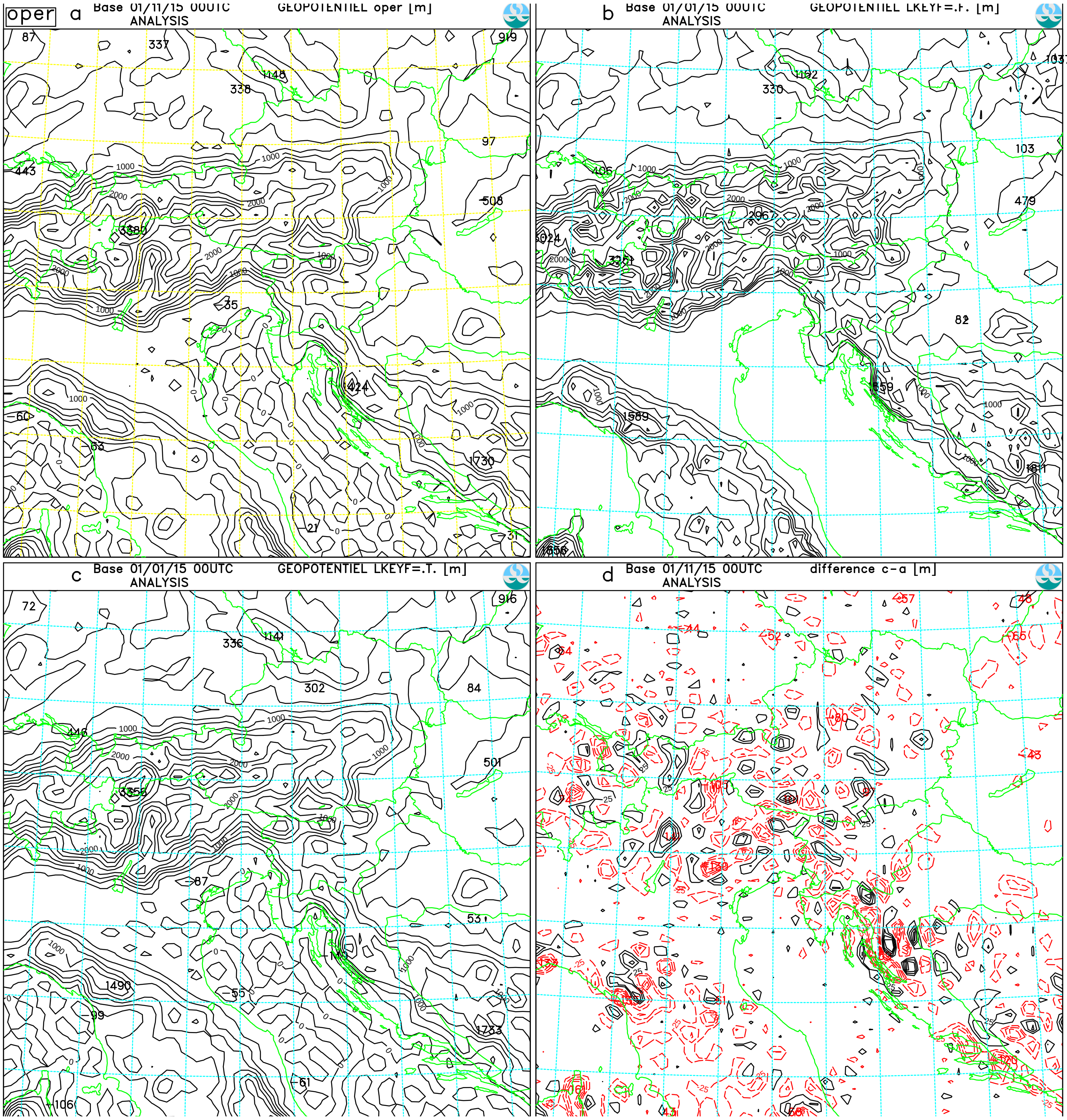


Figure 1: Surface topography for the Slovenian domain;
a) from operational clim file created on Fujitsu with spectral fit LKEYF=.T.,
b) from clim file created on workstation without spectral fit (LKEYF=.F.),
c) from clim file created on workstation with spectral fit (LKEYF=.T.),
d) difference between fields c and a

Sources of modified routines for workstation version (gtoptx2.F, gtoptxy.F, gtopty2.F, locmaxi.F, eincli1.F, einter1.F, m1qn3.F m1qn3a.F ystbl.F mlis0.F dds.F dd.F), with example of Makefile and namelists for each step of configuration e923 are on delage: ~mrpe691/report/c923/e923workstation.tar.gz.

4. How to run configuration e923 on workstation

Transfer all needed input files from delage. If you have problems with space extract subdomain from global data for files needed for step 1.

Prepare namelists (examples can be found on delage in the script ~mrpe691/report/c923/job923_n or inside ~mrpe691/report/c923/e923workstation.tar.gz)

Try to run the model, be careful: steps 4 to 6 have to be done for each month.

If there are problems some changes should be made. You can take subroutines from delage ~mrpe691/report/c923/e923workstation.tar.gz and compile ALADIN program again.

5. Changes in cycle AL11

Here are listed some information about configuration e923 in cycle AL11.

- NAMCLI need not to be filled since cycle AL11
- Routines needed for minimization are included in export version.
- The changes needed for local domain computation have been introduced in new cycle.
- Some smaller input files are on dino also.

Example of the script with namelist for Fujitsu (from D.Giard) can be found on delage ~mrpe691/report/c923/job923_al11.

Second Workshop on variational configurations in ALADIN

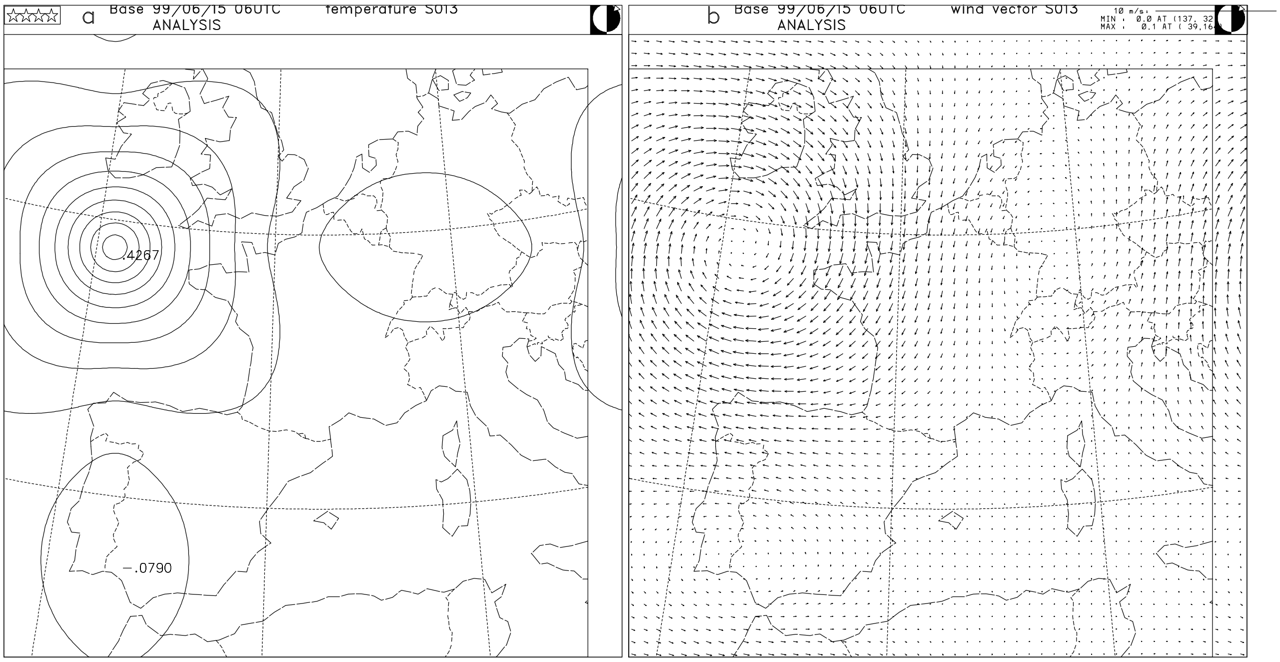
(more details claude.fischer@meteo.fr)

The second workshop on variational configurations in ALADIN took place in Toulouse along June and July, with the participation of Radmila Bubnova, Claude Fischer, Andras Horanyi, Wafaa Sadiki, Maria Siroka and Cornel Soci.

Wafaa and Cornel successfully implemented the screening, i.e. the new procedure for observation selection, in ALADIN. This step is required for the further use of TOVS observations for example. The screening is ready both for shared and distributed memory applications. Wafaa and Cornel could also focus their efforts on first scientific tests mainly for the choice of a suitable length in the horizontal data thinning process.

Maria and Andras managed to make 3D-Var work, using the old ALADIN-France domain. First encouraging, yet sometimes amazing, results were obtained using the NMC-statistics for the background error covariances. The single-obs experiments carried out by Maria showed that the basic multivariate analysis is running properly, but the analyzed increments remain rather large-scale and "feel" strongly the biperiodization. Andras performed preliminary full-obs analysis and subsequent model forecasts to show that a complete 3D-Var in feasible and that the analyzed state is robust for use in configuration 1. There are only a few technical problems left, related to distributed memory. The main scientific issues are now the treatment of the extension zone and the selection of scales to be analyzed in ALADIN.

Claude focused on the adaptation to non-hydrostatic dynamics and to distributed memory of the linear tangent (TL) and adjoint (AD) codes, while Radmila introduced the dependance on orography in the computation of forecast error statistics.



Single-obs experiment : a +1K (Obs-Guess) increment is analyzed at 500 hPa in the 3D-Var multivariate system. The result is a +0.4267 analysis increment at model level 13 and an anticyclonic wind correction.

ALADIN/LACE and the eclipse of 11th August

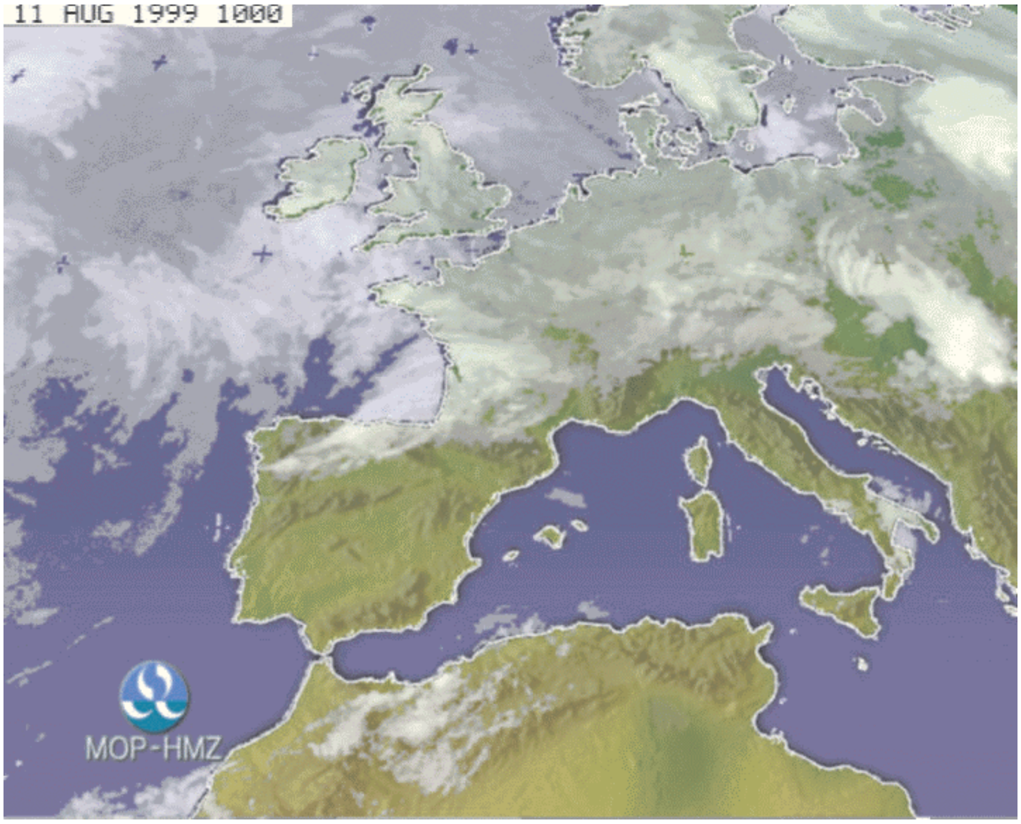
Mark Z agar, Hydrometeorological Institute of Slovenia

It is a well known fact that the total solar eclipse occured on August 11th. In the northeastern part of Slovenia it lasted for 73 seconds at 12h44m local time (10h44m UTC), exactly as it has been forecast. On the other hand the weather situation did not look very promising, at least not until a day before the 11th as an active frontal passage was expected for that day, based on ECMWF forecast. It was leaving only a small chance of a heavenly window, mainly over the western Panonian basin.

The forecast of ALADIN/LACE from 10th, 00 UTC confirmed this option. On the simulated IR satellite image for August 11th, 10 UTC (Fig.1) with the treshold of approx. 0°C we can clearly see a region of relatively clear sky over the western Panonian basin, the gray band being actually some transparent cirrus cloud (also partially transparent for the outcoming LW radiation, therefore seeming warm).

Comparing the simulated image with the real EUMETSAT shot for the same time (Fig. 2) does not call for any particular explanation. From our point of view this eclipse was a double joy.


10/08/99
12:00

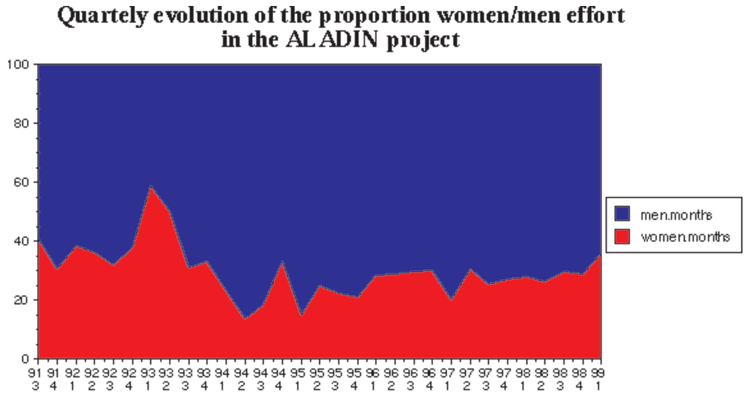

11 AUG 1999 1000
MOP-HMZ

A new constant in ALADIN : XXsurXY

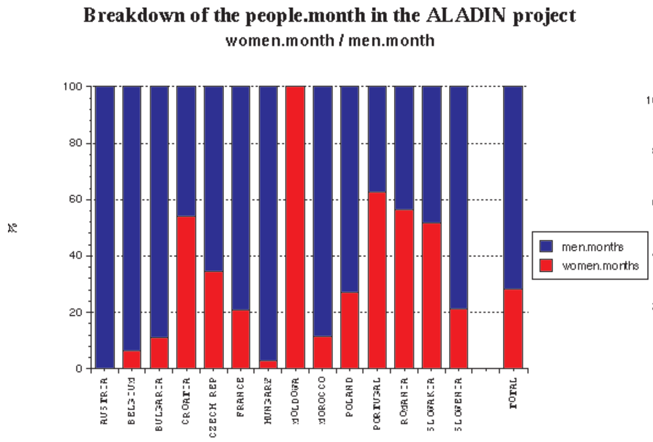
(more details patricia.pottier@meteo.fr)

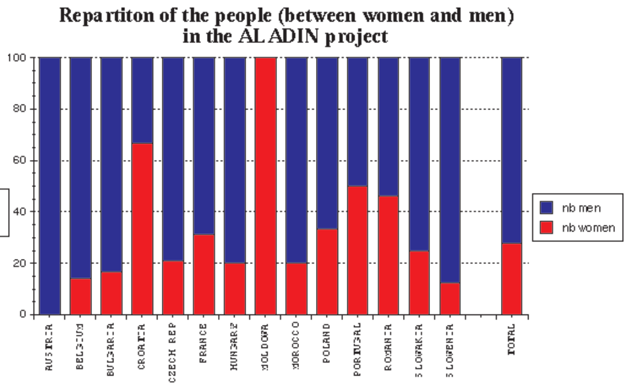
While elaborating the EU proposal (ALATNET), we discovered a new constant in the ALADIN project. It is about proportion of men and women in the project. One sentence among some hundred pages in the "Guide for Proposers" indicated that this proportion was a criterion for the selection and hence we considered it was interesting to go further and study the problem with the tools of our data base.

It was opportunity to study this aspect of the ALADIN project. All statistics have been drawn up. Main conclusions are :



- the results are very similar if you consider "Total work" or only "Toulouse work";
- the results are quite constant in time (since the beginning of the project);
- there is a great variability within the ALADIN countries : one is only populated with men !... , another one with women !..





- men and women are equally hard workers !... the proportion of women and the proportion of the work realized by women are equal : 28% of ALADINers are women and they contribute to 28% of the effort (in people.month). As a comparison, within Météo-France/CNRM technical people, women are 25% but only 20% in GMAP (did you notice that women "stagiaires" are always welcome in GMAP ?).

Verification of ALADIN/Slovakia

(more details bellus@mail.shmu.sk)

1. *Introduction*

Roughly speaking the verification has two main aspects: synoptical and numerical, which could be paradoxically even antagonistic. Let me give one example:

From the synoptical point of view it is out of interest, for the forecasters as well as for the customers, to have a prediction for Lomnicky stit, which is our highest meteorological station placed at the altitude 2634 meters at the top of the hill. But on the other side, it is very important for numerical meteorologists to know how model behaves in such extremes.

It is no doubt that the model orography is the main source of errors in case of temperature forecasts. If the station represented by the grid point has very different altitude from the reality, there is of course a systematic error of temperature forecast observed. Hence it, the main idea was to increase the horizontal resolution of the model to improve the forecast (mainly the forecast of temperature) just by getting the better representation of the altitude.

Applying the smaller horizontal step we can for sure improve the orography in mountain territory, but there is unfortunately no assumption of significant improvement of model orography in lowlands (what would be more interesting for the forecasters as the improvement in the mountains on the other side). Also the higher resolution of model outputs has not probably great sense for the forecasters except for the cases when it should describe processes of smaller horizontal rate.

From the synoptical point of view, we are interested in practical usage of the model outputs in forecasting processes. We are of course aimed to our ‘‘local’’ territory and we want to know the credibility of the model predictions for our cities and places. Knowing the verification conclusions we can afterwards do some corrections of forecasted parameters for given cities or territories. In case of 2 meters temperature we can make also correction on altitude to get rid of the commonly known problems with wrong representation of the station by model orography. But the effect of local conditions may unfortunately work parallel to the orography phenomena. It means, that the orientation of slope or surround terrain plays also important role and the improvement of altitude doesn’t mean improvement of local conditions in any case.

On the other side, from the numerical point of view, we wanted to know the reason of the model failure (if it fails) and we are trying to understand the related processes.

2. *ALADIN/SLOVAKIA*

As it was already outlined, we are running high resolution numerical model ALADIN/SLAVAKIA in our institute on the DEC station XP1000.

The model domain has 90x64 grid points (what is 79x53 grid points in the Coupling + Inner zone) and it covers the area 646x460 km. The longitude and the latitude of low left corner is 16.02E and

46.92N and up right corner 23.65E and 50.27N. The horizontal step of the model is 7.18 km and it has 31 vertical levels. The time step is 337.5 s and the integrations are done up to 48 hours.

The difference between ALADIN/LACE (limited area model for central Europe integrated in Prague) and ALADIN/SLOVAKIA is just in the horizontal step. Our implementation has 7.18 km horizontal resolution while ALADIN/LACE has horizontal step 12.2 km (from the 26-th of OKT'98 12 UTC). So the difference between those two models is just in the improvement of orography in case of ALADIN/SLOVAKIA and there were no physical parameters tuning done, even if some of the physical parameters are time step and horizontal step dependent.

3. About verification

The main goal of verification was to compare those two models and to investigate if the higher resolution brings also the forecast improvement.

We started our verifications by assumption that verified synoptical station is represented in the model grid by the nearest grid point. It's questionable if it is the best access and there is for sure some other possibility how to get the model outputs directly for the verified station. For example the interpolation of values from the surrounding of the station is offered, but it's doubtful if it is relevant while having such high horizontal resolution. May be, it will be better to chose simply the best represented grid point (as for the altitude) from the surround of the station.

The data are interpolated in time to get hour output values from the model (we have GRIB files from the ALADIN/LACE with the three hours periodicity). This is inevitable if we want to compare the model's predictions with the observed data. Because of the small domain of ALADIN/SLOVAKIA, we can have its historical output files for each hour up to 48 hours. As the verification interval we took the month period, because it seems to be logical from the synoptical aspect and it is also quite enough data from the statistical point of view.

We verified just the model integration from 00 UTC. The reason was that this is the most used run by the synoptic meteorologists (it's actual when weather forecasts are made). Except for the temperature outputs from operational model ALADIN/LACE and our implementation ALADIN/SLOVAKIA we used also the filtered temperature prediction by Kalman filter (applied on ALADIN/LACE model). To be consisted we took just the filtered 48 hours prediction from 00 UTC.

4. Orography and territory division

The Fig. 1 shows real and models' orography for our 22 verified synoptical stations. One can see there, that the differences in altitude between those stations are quite big. It is evident (and of course expected) that the mountain stations are worse represented by the model orography as the stations situated on the lowlands. From the following table the differences between models' orography and real altitude for verified stations can be better seen.

IND	ST.	DIFF. 14,7 km	DIFF. 12,2 km	DIFF. 7,2 km
11816	BRATISLAVA	145,9	133,9	50,1
11819	JASLOVSKE_BOHUNICE	48,1	11,8	5,4
11826	PIESTANY	38,6	77,3	88,2
11841	ZILINA	317,2	324,6	202,4
11855	NITRA	49,9	94,8	61,0
11856	MOCHOVCE	-57,6	58,9	-40,1
11858	HURBANOVO	18,1	14,2	12,7
11867	PRIEVIDZA	377,7	421,1	126,7
11880	DUDINCE	113,4	100,3	41,2
11903	SLIAC	276,7	207,0	195,6
11916	CHOPOK	-778,3	-778,4	-593,7
11918	LIESEK	173,0	184,9	16,0
11927	LUCENEC	80,9	30,1	-14,2
11930	LOMNICKY_STIT	-1267,5	-1034,4	-735,3
11933	STRBSKE_PLESO	311,3	369,1	285,4
11934	POPRAD	677,7	479,1	127,6
11938	TELGART	150,5	341,3	375,9
11958	KOJSOVSKA_HOLA	-589,4	-514,4	-429,9
11968	KOSICE	169,1	165,1	63,0
11976	STROPKOV	159,6	151,9	147,6
11978	TREBISOV	20,7	22,3	-17,7
11993	KAMENICA_N.C.	264,8	175,9	182,6

(green)	Improvement
(yellow)	Desimprovemen

In the last column there are altitude differences for ALADIN/SLOVAKIA. Green boxes represent the improvement of altitude for given verified station against the ALADIN/LACE orography. Yellow boxes to the contrary represent the desimprovement of altitude for given station. The orography differences for the models (ALADIN/LACE with 14.7 and 12.2 km resolution and ALADIN/SLOVAKIA with 7.2 km resolution) are displayed on Fig. 2. One can see there very clearly which stations are over-estimated and under-estimated concidering the altitude. Those things led as to make some territory divisions owing to the different representation of station by the model orography. The next table shows territory division with RMSE of average altitude for those territories.

TERRITORY DIVISION		No.	RMSE of altitude 14,7 km	12,2 km	7,2 km
West:	BRATISLAVA, JASLOVSKE_BOHUNICE, PIESTANY, NITRA, MOCHOVCE, HURBANOVO	6	72,1	78,2	51,3
Middle:	PRIEVIDZA, ZILINA, DUDINCE, SLIAC, LUCENEC	5	260,5	259,4	139,4
East:	KOSICE, STROPKOV, TREBISOV, KAMENICA_N.C.	4	176,5	143,0	121,9
South:	HURBANOVO, DUDINCE, LUCENEC	3	81,1	61,0	26,2
Mountain:	CHOPOK, LIESEK, LOMNICKY_STIT, STRBSKE_PLESO, POPRAD, TELGART, KOJSOVSKA_HOLA	7	672,8	592,5	433,8

And finaly, the improvement of orography for our choosen territories by changing the resolution from 14.7 through 12.2 to 7.2 km is displayed on the Fig. 3. From that figure it's possible to see the bigger improvement of orography in mountain territory while such tendency is not so prominent in case of lowlands.

5. *Verification of 2 meters temperature*

Verification of 2 meters temperature can be divided into two parts:

- a) verification of 24 hours forecast from the midnight integration (00 UTC)
- b) verification of the ranges 0-48 for the integration from 00 UTC

We have verified month periods from Oktober'98 up to now and some examples you can see on the figures 4 - 10.

- The Fig. 4 shows the month evolution of 2 meters temperature for western territory in October'98 and also behavior of both models and Kalman filter. It is interesting to see how both models forecasted all three temperature drops during October'98 (see magnified pictures).
- On the Fig. 5 and 6 you can see BIAS and RMSE of 2 meters temperature for middle territory. There is evident decreasing of BIAS and also RMSE in case of ALADIN/SLOVAKIA, mainly through the day. It is connected with the improvement of orography and little bit worse results during the night are probably caused by wrong parameterization of radiation cooling.
- On the Fig. 7 and 8 there are examples of advantages and disadvantages of filtered forecasts of temperature. The Fig. 7 shows how Kalman filter can correct the forecast while model is wrong. To the contrary Fig. 8 shows failure of Kalman filter (there were 3 days of permanent under-estimation of temperature by the model while on the 4-th day model was correct, but Kalman filter owing to its memory over-estimated the temperature forecast by 10 degrees Celsius).
- The Fig. 9 and 10 displayed BIAS and RMSE of 2 meters temperature for Poprad for each of 48 ranges. The improvement of forecast in case of ALADIN/SLOVAKIA is evident.

6. *Verification of MAX/MIN temperature*

- The Fig. 11 and 12 shows the differences between mountain and lowlands stations. In case of Bratislava you can see quite good distribution of BIAS for MAX and MIN temperature forecasts with the center around zero, while in case of mountain station Lomnicky stit the center of distribution is shifted to the right. It means, that the temperature forecasts on mountain stations are over-estimated by the model, what is caused by lower model altitude for such stations in comparison to the reality.
- The Fig. 13 and 14 shows improvement of MAX and MIN temperature forecasts for mountain territory. Such evident improvement can be seen just in mountain territory, while in lowlands the improvement is not so significant for the whole month period.
- It is evident that higher horizontal resolution brought improvement of temperature forecasts nearly for each station. On the Fig. 15 and 16 there are MAE of MAX and MIN temperature for our 22 verified synoptical stations. The Fig. 15 shows MAE in case of ALADIN/LACE and Fig. 16 shows MAE in case of ALADIN/SLOVAKIA. There can be seen decreasing of MAE for MAX and MIN temperature forecast while having higher resolution (ALADIN/SLOVAKIA) mostly at mountain stations. Such improvement in percentage can be clearly seen from the Fig. 17.

7. *Figures*

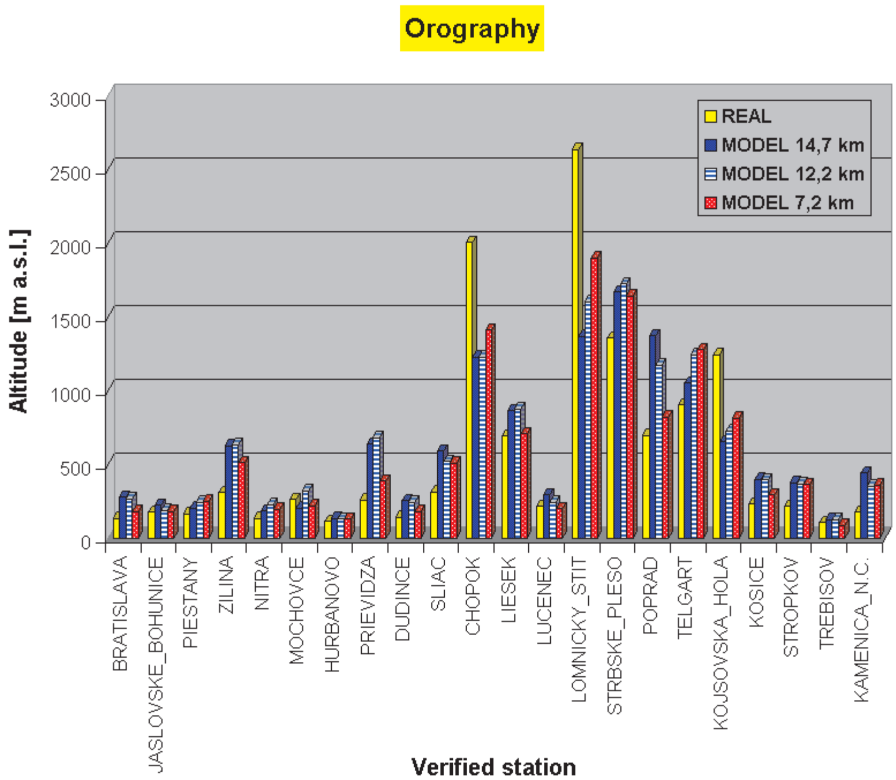


Fig. 1: Real and models' orography for 22 verified synoptical stations.

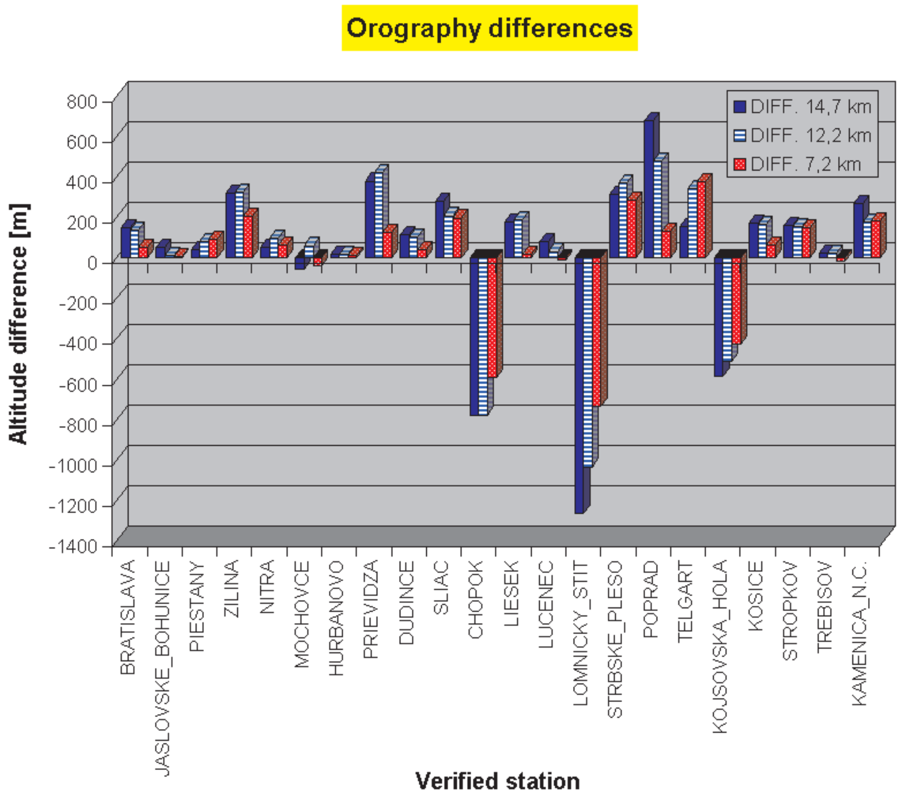


Fig. 2: Differences of models' and real orography for 22 verified synoptical stations

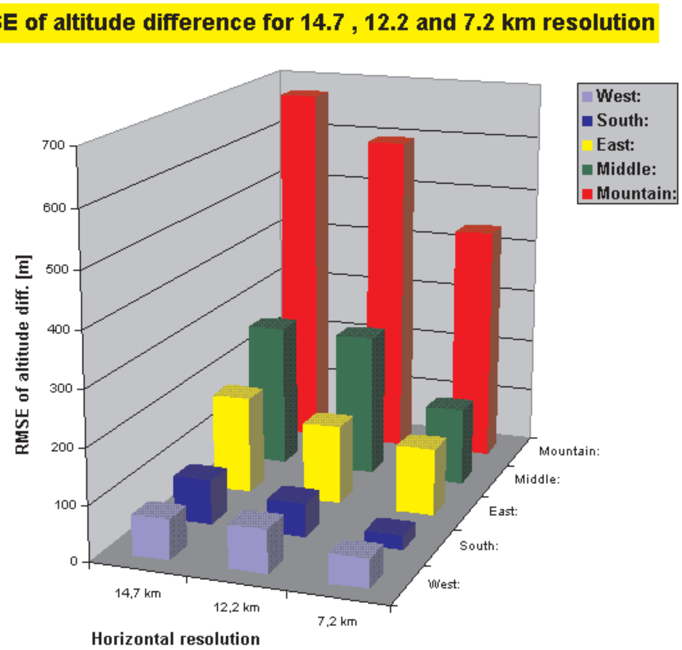


Fig. 3: RMSE of altitude for selected territories and for different horizontal resolutions

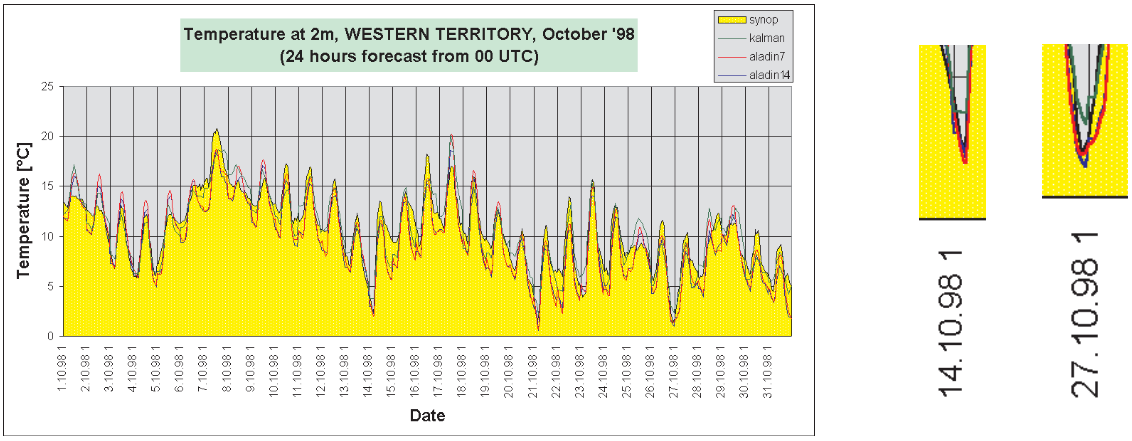


Fig. 4: Temperature evolution for western territory (October'98) and zoomed temperature drops

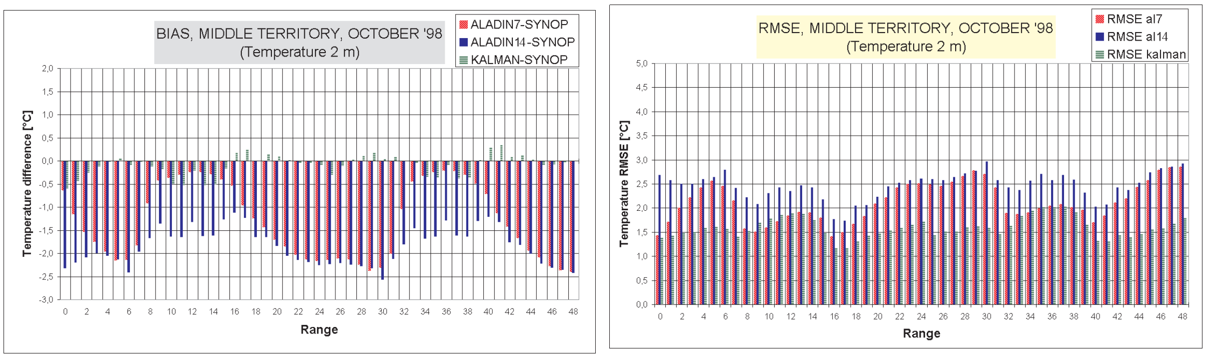


Fig. 5 and 6: BIAS and RMSE of 2 meters temperature for middle territory (October'98)

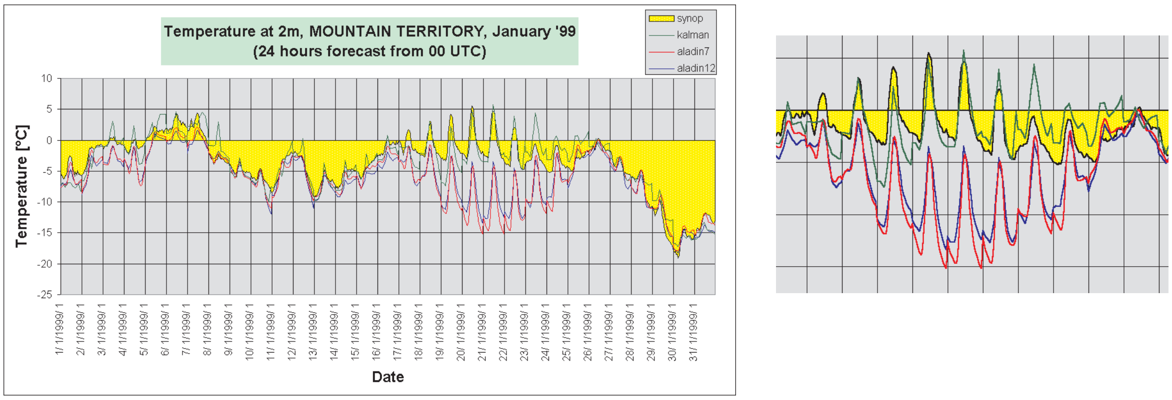


Fig. 7: Success of Kalman filter (see the zoomed area)

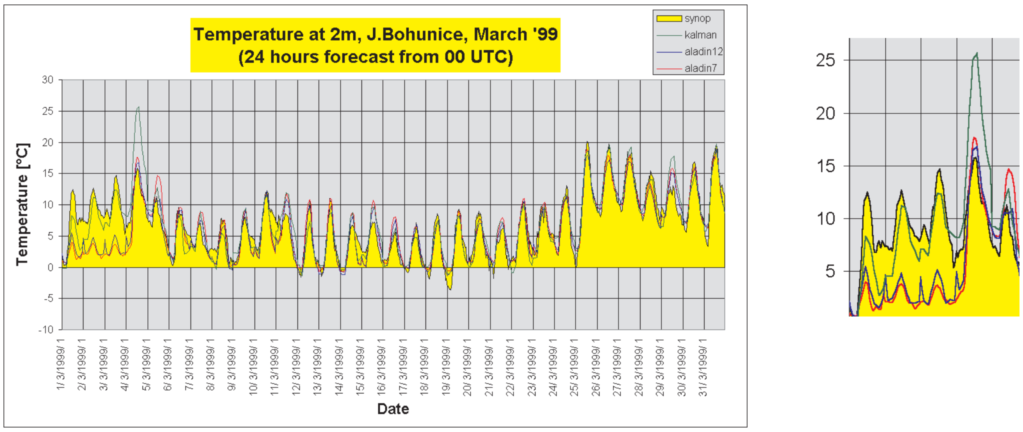
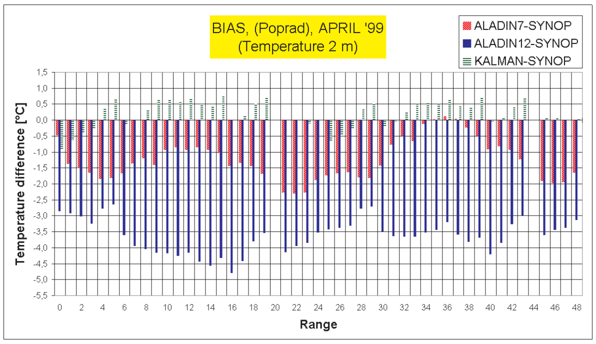


Fig. 8: Failure of Kalman filter (see the zoomed area)



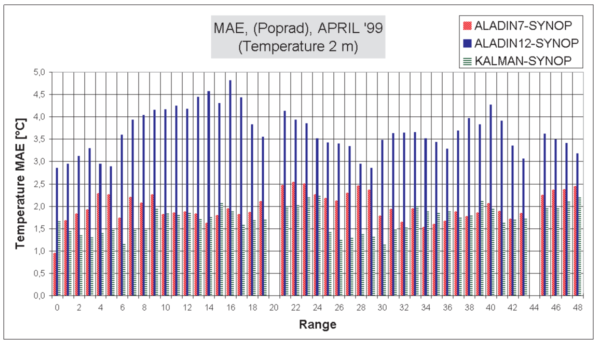
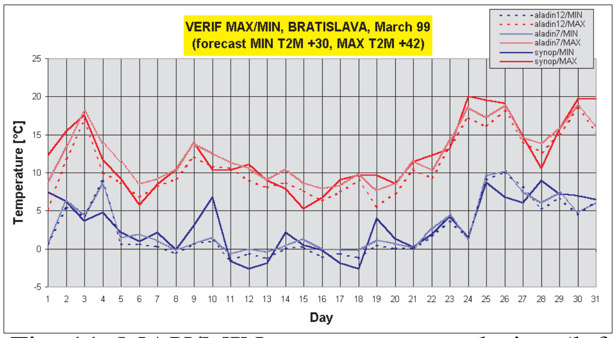


Fig. 9 and 10: BIAS and MAE of 2 meters temperature for Poprad station (April'99)



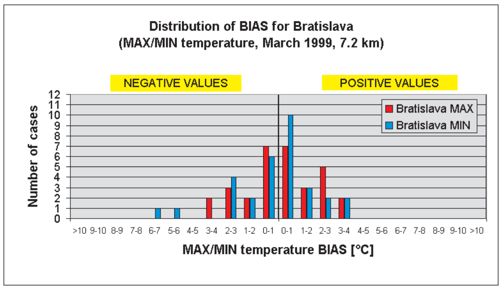
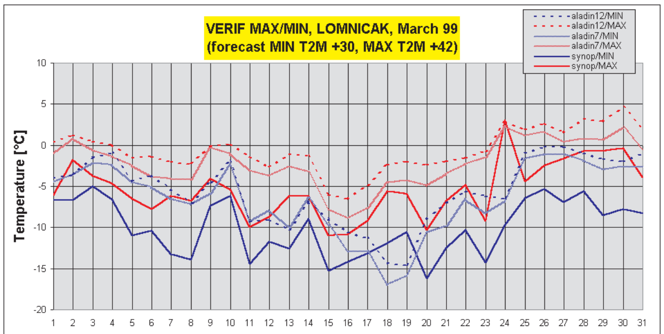


Fig. 11: MAX/MIN temperature evolution (left) and distribution of BIAS (right) for Bratislava



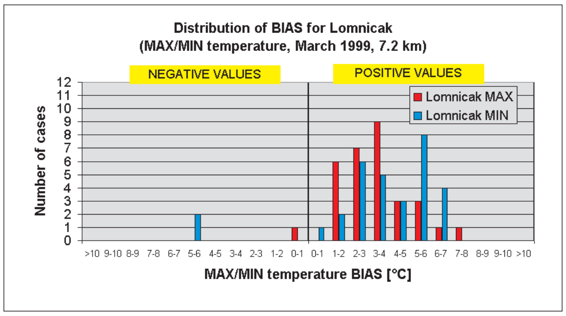
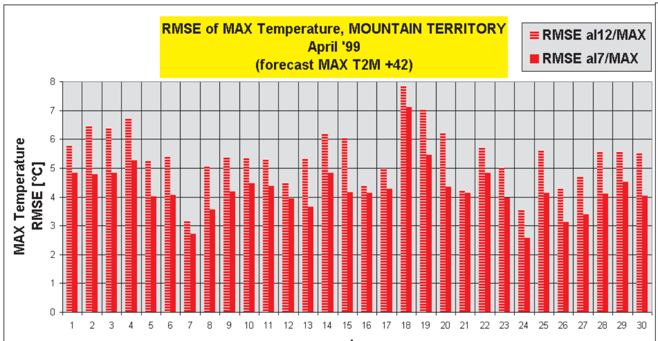


Fig. 12: MAX/MIN temperature evolution (left) and distribution of BIAS (right) for Lomnicky stit



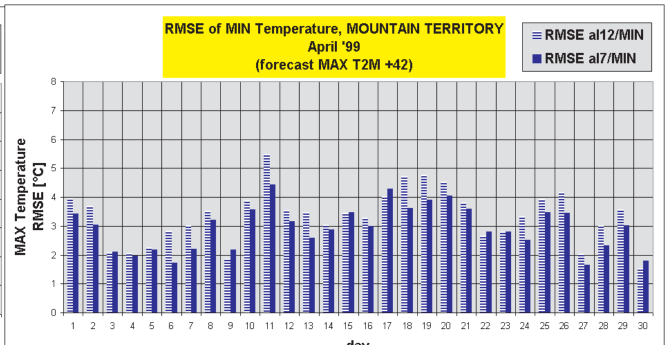
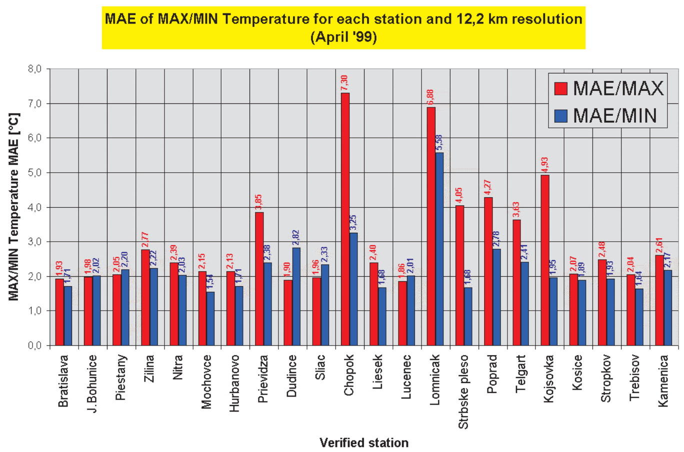


Fig. 13 and 14: RMSE of MAX (left) and MIN (right) temperature for mountain territory (April'99)



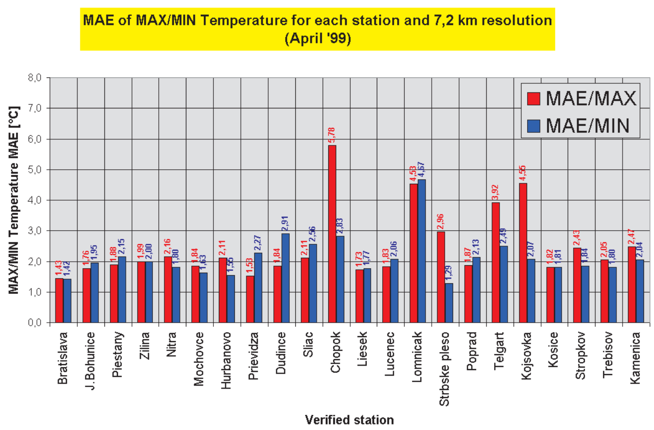


Fig. 15 and 16: MAE of MAX/MIN temperature for 12 km (left) and 7 km (right) horizontal resolution for 22 verified synoptical stations (April'99)

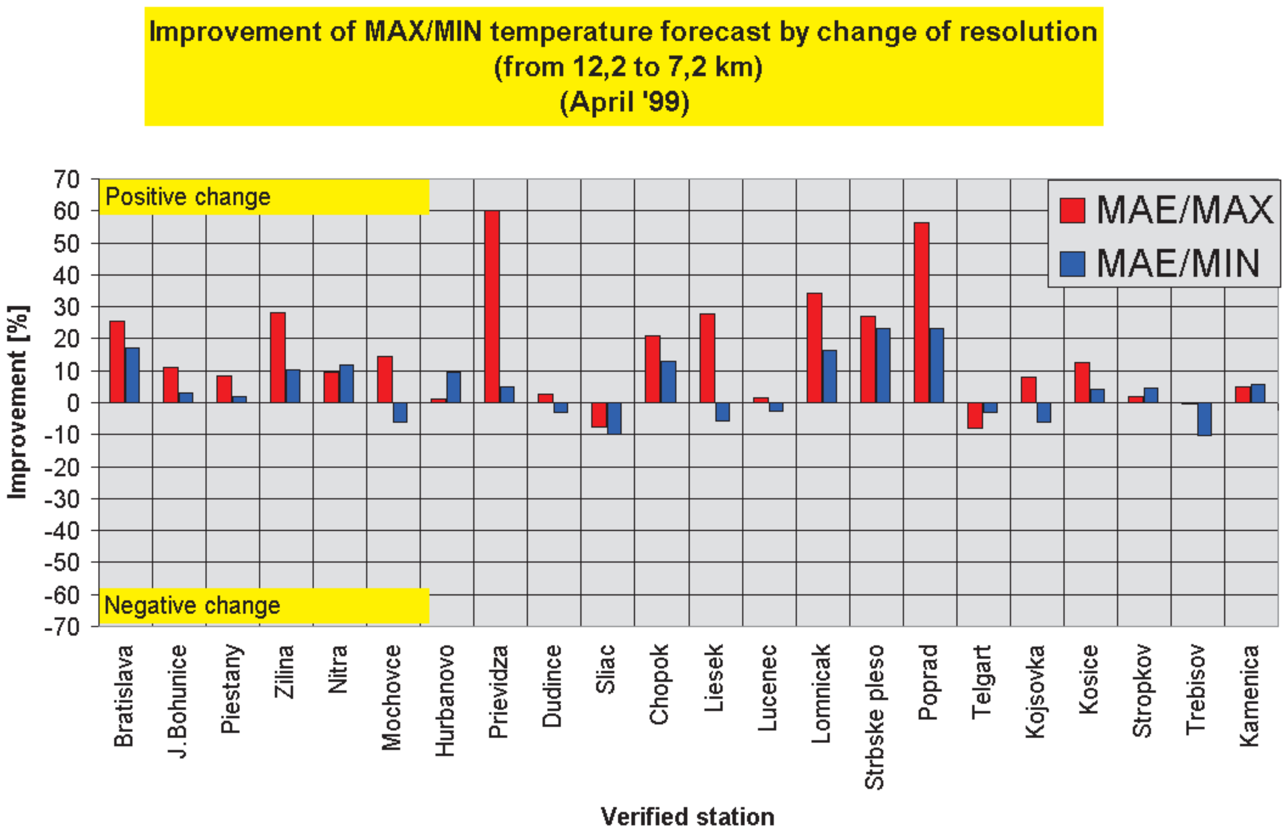


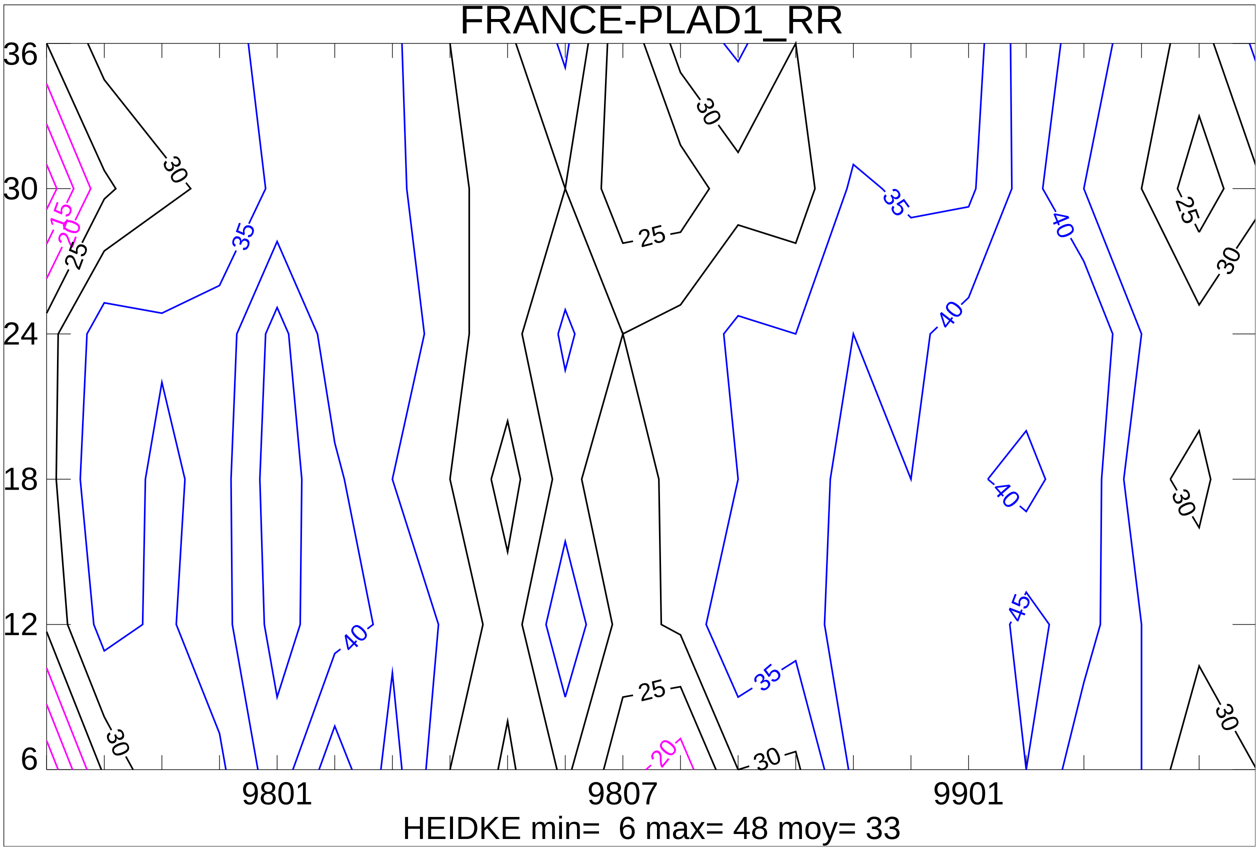
Fig. 17: Improvement of MAX/MIN temperature forecast for 22 verified synoptical stations (April'99)

Scores on ALADIN-FRANCE during the second quarter of 1999 : Comments on cloud cover and precipitations forecasts scores

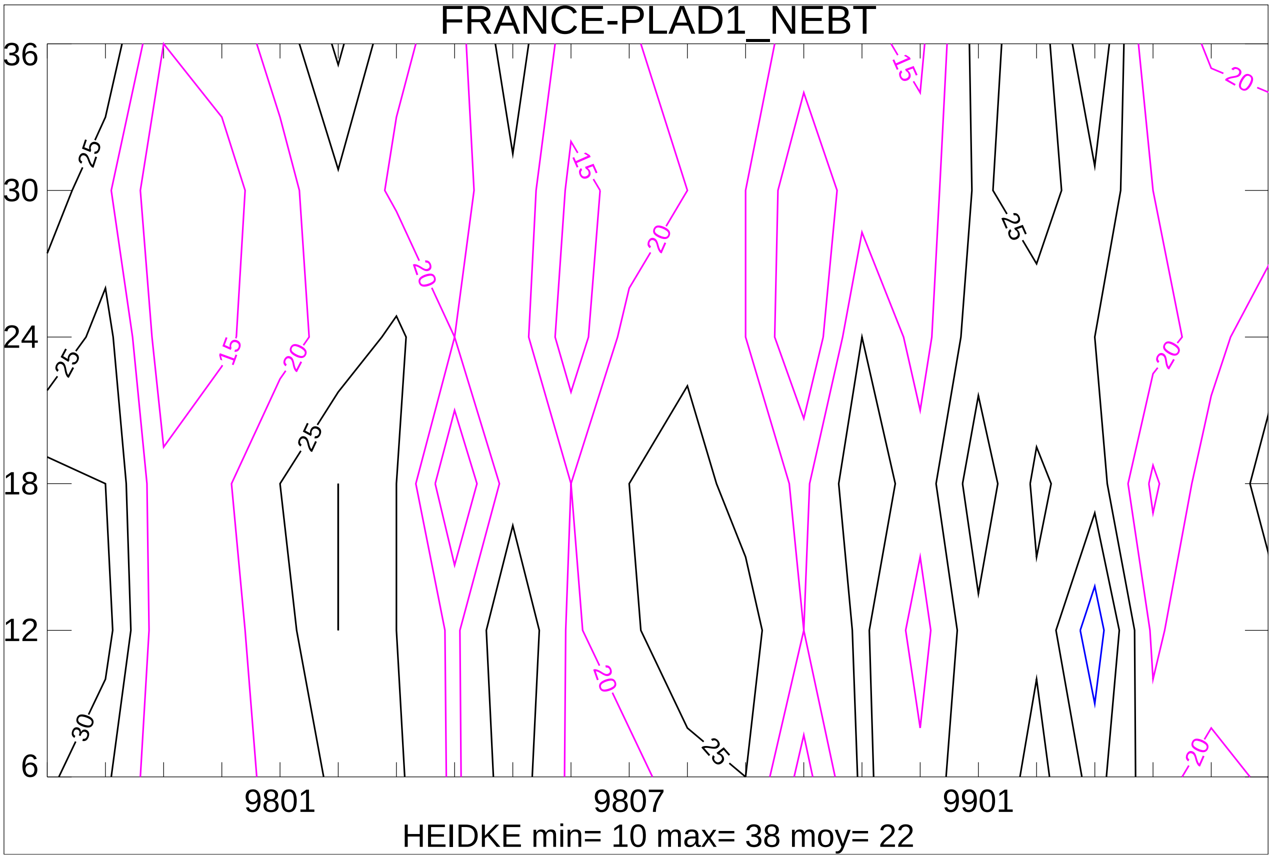
(more details jean-marc.moisselin@meteo.fr)

Next figures show the contour plot of Heidke Skill Score (HSS) against hazardous forecast for both precipitations and cloud cover parameters from september 1997 to june 1999.

The classes used to calculate HSS are well known EWGLAM classes. Scores have been calculated over FRANCE with 00H as base. Highest values (HSS greater or equal than 35/100) are plotted in blue and smallest one in red (HSS lower or equal than 20/100).



*Contour plot of HSS*100 for 6 hours cumulated precipitations ("6H fc range" means precipitations between 00h00 and 06h00). X-axis=month, Y-axis=forecast range*



Contour plot of HSS for cloud cover. X-axis=month, Y-axis=forecast range

- Comments on precipitations

There are about 135 synoptic stations used for ALADIN precipitations verification.

The average value of HSS is 0.33 which is correct with this severe criteria.

The vertical aspect of the contour is reliable to a seasonal dependency of HSS. Values are higher in winter (sometimes more than 0.40) than in summer (sometimes lower than 0.25). It is difficult to extract forecast range dependency but we can note :

* In spring and summer a 12h cycle (HSS minimum for 6, 18 and 30H forecast ranges)

* In winter better results until the 24H forecast range

- Comments on cloud cover

The number of synoptic stations used for ALADIN cloud cover verification varies from 40 (24H validity hour) to 130 (6H validity hour). Thus it is difficult to analyse forecast range variations.

The average value of HSS is 0.24 wich is medium.

The aspect of contours is vertical. Values are higher in winter than in summer. The decrease with forecast range (for a same validity hour) is not very high : about 0.05 in 24 hours.

Participations in the ALADIN project

The statistics about the participations in the ALADIN project and the ensuing compilation of the ALADIN developments are drawn up from the contributions sent by the representative of each country. Please find in annex the graphics illustrating the last summary of the participation in the ALADIN project.

Prague (RC-LACE) and Toulouse actions are registered immediately (i.e. at the end of June 1999 for the current statistics) while a tree months' lag is applied to the deported contributions (i.e. at the end of March 1999 for the current statistics).

In this Newsletter, you can find a more complete sample of the statistics that are produced; others can be drawn up on request.

In the next three parts ("Deported developments during the first quarter of 1999", "ALADIN developments in Prague/LACE during the second quarter of 1999" and "ALADIN developments in Toulouse during the second quarter of 1999"), you will find the list of the ALADIN developments (in Prague, in Toulouse and outside) except those detailed in the previous pages : PhD studies, developments for workstation versions or operational suites, ... during the quarters concerned by this Newsletter. The following informations concerning the deported developments are obtained from informations you sent.

Deported developments during the first quarter of 1999

During this quarter, 55 persons have worked on ALADIN "at home" (i.e. in their NMS : not in Toulouse) and their global effort represents about 70 people.month during this period.

1. In Austria

- nothing to report for this quarter.

2. In Belgium

- Objective validation of ALADIN-Belgium (B. Schenk),
- ALADIN validation during exceptional meteorological situations (J. Neméghaire, J. Vanderborght),
- CANARI assimilation (O. Latinne),
- Performance analysis (F. Chomé),

- Operational work, phasing AL10/CY20, beginning of the work on the documentation of the physic, developments of a pronostic scheme for the convection with (L. Gérard).

3. In Bulgaria

- Pre-operational running of ALADIN 09 (A. Bogatchev)
- Scripts for automated receiving of coupling files (P. Simeonov).

4. In Croatia

- no report from Zagreb this quarter.

5. In Czech Republic

- Study of the tropical cyclone simulation by ALADIN (D. Dufkova),
- Development of postprocessing tool for ALADIN (D. Dvorak),
- Development of Kalman filtering of ALADIN forecasts (Z. Huthova).

6. In Hungary

- ALADIN on SGI, CANARI (A. Horanyi),
- Porting of ALADIN to SGI platform, quasi-operational application of CANARI (G. Radnoti),
- Verification of ALADIN/LACE and ALADIN/HU (T. Szabo).

7. In Moldavia

- nothing reported this quarter.

8. In Morocco

- 3D-Var in ALADIN/Maroc (W. Sadiki),
- Operational work, tests for the installation of AL09 on the operational suite (R. Ajjaji),
- Characterization of meteorological situations from analyzed fields (M. el Abed),
- Project of regional forecasts, ALADIN documentation (J. Boutahar).

9. In Poland

- Administration and organisation, (M. Jerczynski),
- Administration of operational system (M. Jerczynski, W. Owcarz),
- Development of verification software (A. Dziedzic, M. Szczech),
- Enhancement of visualisation system (A. Dziedzic, J. Woyciechowska).

10. Portugal

- Coordination (M. Almeida),
- Development and code maintenance (C. Madeira),
- Research on convection (F. Prates).

11. In Romania

- Case studies (L. Dragulanescu, E. Cordoneanu, C. Soci),
- Data basis organization for the observation handling in data assimilation (B. Caraman, L. Dragulanescu),
- Implementation of the 1D version of ARPEGE/ALADIN model (D. Banciu),
- Coupling of the wave model WAGROM with the atmospheric model ALADIN (S. Briceag),
- Surface parameter tuning, studies using NH version of Aladin (M. Caian),
- Analysis of the subjective evaluation of Aladin forecast for Romania (D. Otilia).

12. In Slovakia

- Verification of surface parameters from ALADIN/LACE (J. Vivoda) and ALADIN/Slovakia (M. Bellus),
- Verification of pseudo-TEMPs (M. Gera),
- Workstation version ALADIN/Slovakia, code maintenance (O. Spaniel).

13. In Slovenia

- Visualization of MAP products (J. Vehovar),
- Cycling (J. Jerman),
- Particular setup of cluster of DEC/alpha workstations for computation of ALADIN (J. Jerman, M. Kozelj).

14. Deported work by Météo-France people

- in Prague : Establishment of scientific partnership between Toulouse and Prague ALADIN teams (J.-F. Geleyn),

ALADIN developments in Prague during the second quarter of 1999

The maintenance of ALADIN/LACE and the operational suite was shared by R. Bubnova, M. Janousek, G. Radnoti and M. Siroka.

T. Haiden and D. Klaric worked first on the ALADIN scientific plan. Then D. Klaric studied the blending by DFI and T. Haiden made some tests of convection schemes.

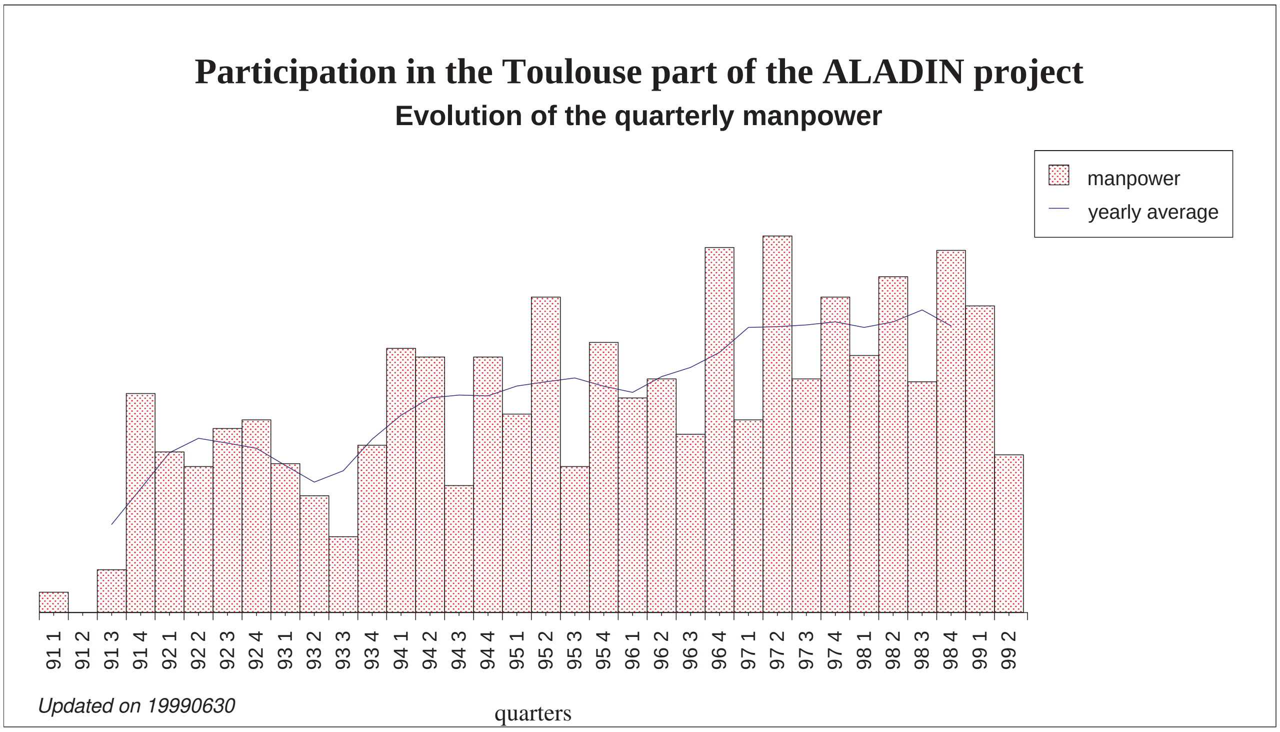
M. Bellus studied the dry and moist convection in ALADIN.

H. Seidl introduced convection indices in DIAG.PACK.

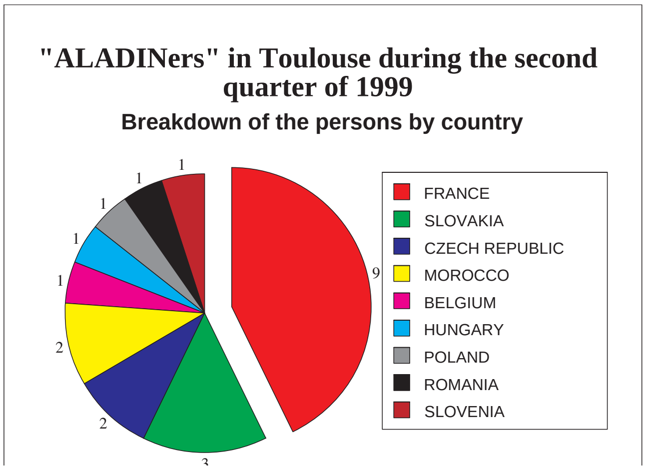
K. Stadlbacher made some developments in VERIF.PACK.

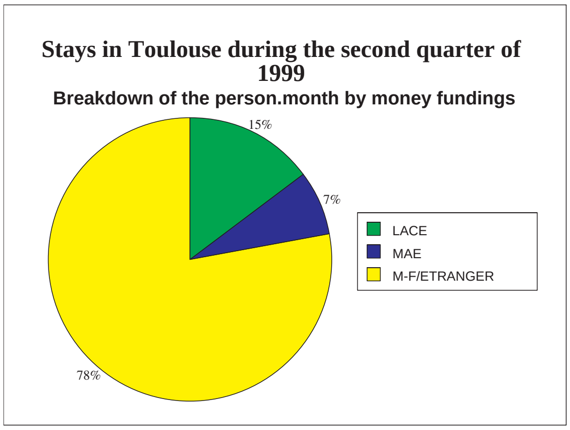
ALADIN developments in Toulouse during the second quarter of 1999

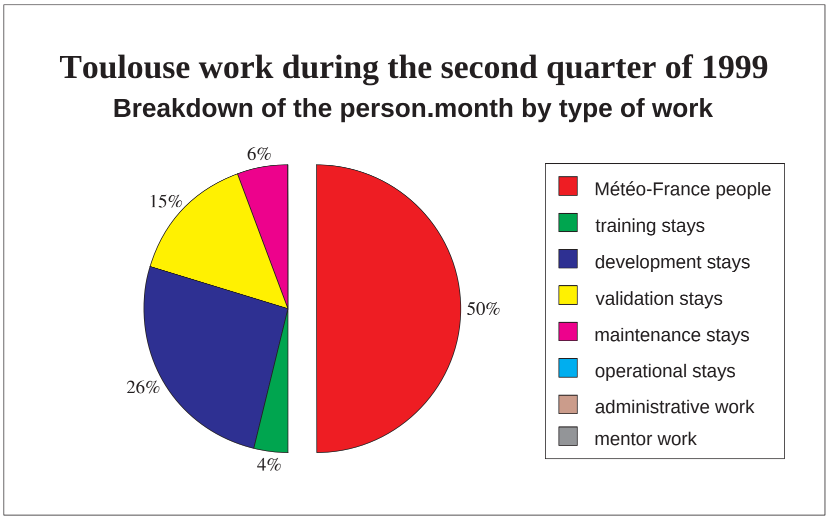
During the last months, GMAP offices have given to all ALADIN visitors and GMAP people the impression that they were less crowded than usual. The effort in Toulouse during this quarter was the smaller one for years !...



Less than 30 persons (and less than 60% of visitors) coming from 8 countries on only 3 different fundings (Météo-France support, last 1998 ambassy support and LACE funding) during this quarter. Their commun effort doesn't reach 30 people.month !... but it was more dedicated to development (no phasing during the quarter).







1. Main events in Toulouse this quarter

See above "Second workshop on variational configurations in ALADIN".

2. Other visitors research or development studies that ended during this quarter

Progress in scientific or technical aspects was rather the part of the 13 other ALADIN visitors :

- Adam Dziedzic studied the "Christmas Storm" (24/12/97) with ALADIN. This case is considered as a classical example for the study of misforecasts with respect to the initial conditions (analysis, assimilation cycle, coupling data, ...). He examined first the respective parts of the domain extension and the coupling files. This case was shown to be quite suitable for sensitivity experiments and the first runs with the new configuration e801 were promising.

- Olivier Latinne used the global FAO database, with a 5' resolution, to improve the description of soil characteristics (depth, percentages of sand and clay) in ARPEGE and ALADIN. He studied afterwards the impact of this new data through some forecasts, and parallel assimilation experiments over last November (in Toulouse then in Bruxelles).
- Josef Vivoda ported the preliminary vertical plane version of ALADIN to cycle AL11 on VPP and managed to make it run in shared-memory environment. He also designed new visualization tools. This work will be finalized from Prague and will greatly alleviate studies in non-hydrostatic dynamics, or in physics.
- Petra Smolikova achieved the coding and test of a new solution to orographic resonance in semi-lagrangian dynamics. However its potential benefits are completely spoilt by additional noise.
- Vladimir Pastircak and Jean-Marcel Piriou managed to merge the latest contributions to the parameterization of convection and found some consistent tunings.

3. Other research or development studies by the Toulouse permanent staff

- While investigating the problems encountered in the design of an ALADIN domain over Southern Pacific, Jean-Daniel Gril showed some problems in the definition of ALADIN geometrical characteristics (EGGX package). A mail was sent to all Partners describing some potential improvements. PLEASE ANSWER WITHIN SEPTEMBER !
- The ALADIN web site offers more and more informations and facilities, thanks to Patricia Pottier and Jean-Daniel Gril.
- Dominique Giard modified configuration e923 so as to allow the design of ALADIN domains with hardly any land (or even no) and the use of an external land-sea mask.

Annexes :

1. List of documents available on public ftp : cnrm-ftp.meteo.fr, under the directory /pub-aladin on the user anonymous

- Toulouse_stays.ps, ***updated on 02/08/99*** : visitors expected in Toulouse in 1999 (provisional document).
- participations_Toulouse.ps, ***updated on 02/08/99*** (5 pages) : graphics statistics of the participation in the Toulouse part of the ALADIN project. Statistics on June 30, 1999.
- participations_compare.ps, ***updated on 02/08/99*** (3 pages) : graphics statistics of the participation in the ALADIN project, since the last quarter of 1995, with a comparison of deported work and work realized in Prague and Toulouse. Statistics on June 30, 1999.
- participations_total.ps, ***updated on 02/08/99*** (4 pages) : graphics statistics of the participation in the ALADIN project. Statistics on June 30, 1999 for the Prague and the Toulouse parts and March 31, 1999 for the Deported work.
- participations_Prague.ps, ***updated on 20/08/99*** (4 pages) : graphics statistics of the participation in the Prague part of the ALADIN project. Statistics on June 30, 1999 .

- ***news15.ps*** : ALADIN Newsletter 15 (color postscript), updated on 23-08-99 (50 pages)
- ***news15bw.ps*** : ALADIN Newsletter 15 (black & white postscript), updated on 23-08-99

- aladintheque.ps : list (with abstracts) of 144 ALADIN documents available in paper format, ***updated on 04-08-99***

- phasersguide.ps : the ALADIN phaser's guide, updated on 30-07-1998
- ***docECTO.v1.10*** : documentation of the ECTOplasm utility, ***updated on 04-02-1999***
- docEDF.v1.10 : documentation of the EDitFile utility, updated on 04-06-1998

- ***minutes_assembly.ps*** : Minutes of the 3rd Assembly of ALADIN Partners, Prague, November 6th, 1998.

- ***kip.ps*** : final report of the ALADIN-KIT action

- ***RFR.ps*** : Final report on the progress of the research at Météo-France/GMAP in the scope of the Reseau Formation Recherche, for five PhD students from countries of Central and Eastern Europe (Prof. J. Rakovec)

- ***MoUnew.ps*** : New version of the Memorandum of Understanding

- ***newplan2001.ps*** : Second medium-term (1999-2001) research plan for ALADIN (new version prepared in April 1999 by the 3-headed team created during the 3rd Assembly of ALADIN Partners to initiate and coordinate the exchanges, collect proposals and prepare the discussions for the next Assembly).

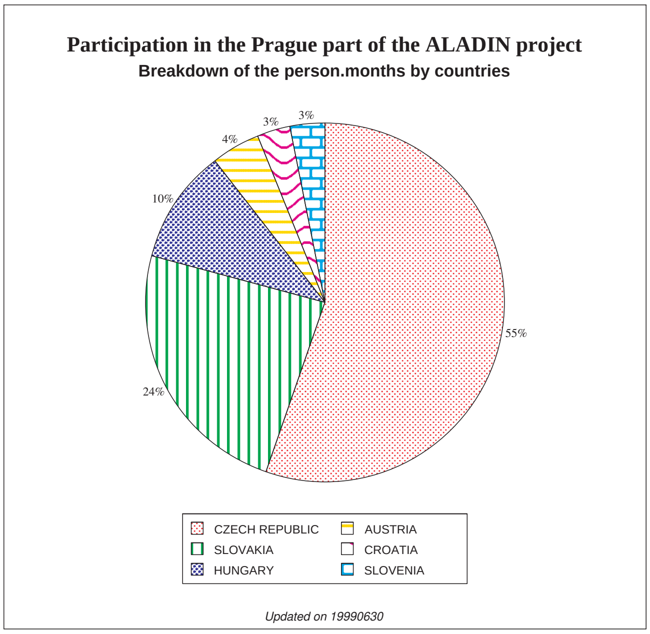
- ***plan1999.ps*** : the 1999 working plan prepared by the 3-headed team created during the last Assembly of Partners to make a new proposal for the Second Medium-Term Research Plan for ALADIN

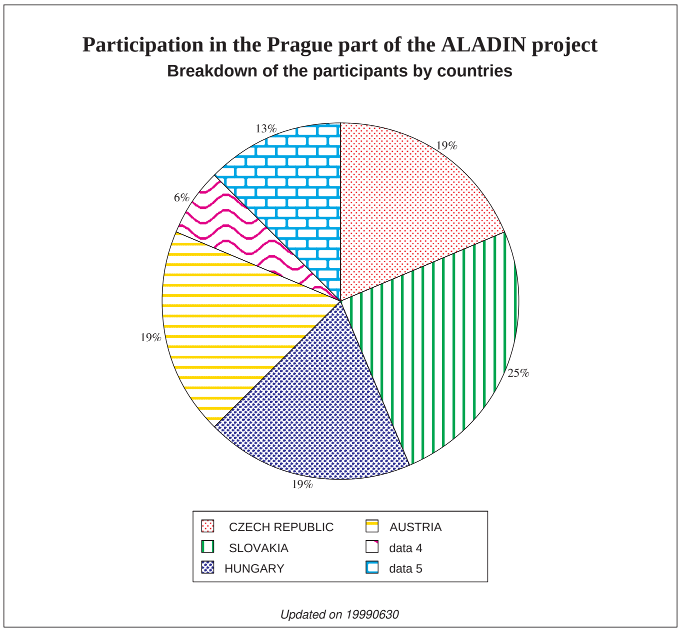
- ***plan1999_fr.ps*** : the 1999 working plan prepared by the 3-headed team created during the last Assembly of Partners to make a new proposal for the Second Medium-Term Research Plan for ALADIN (in French)

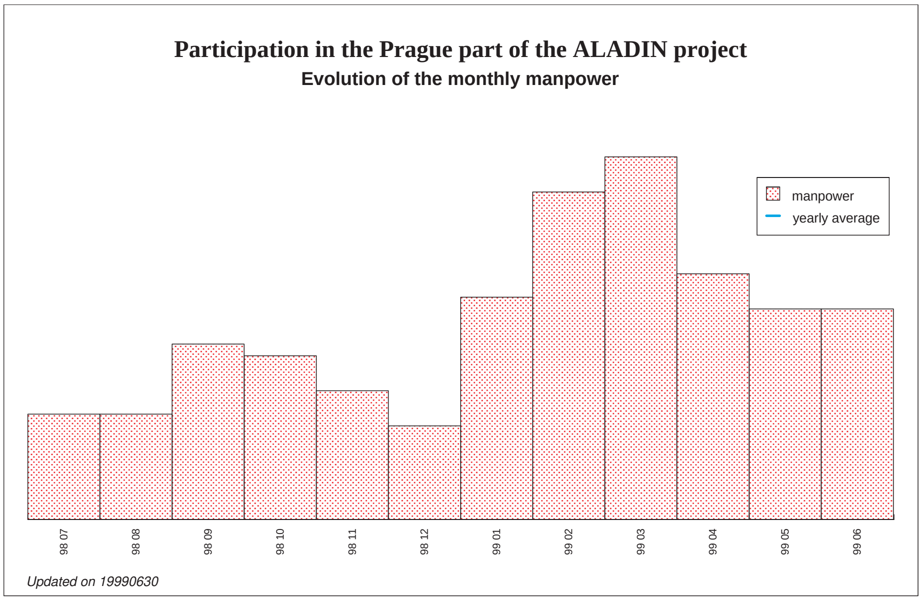
- ***canari_doc.ps*** : the CANARI documentation, updated on May, 1999.

- ***fullpos_doc.ps*** : a new documentation on FULL-POS, updated on August 1999.

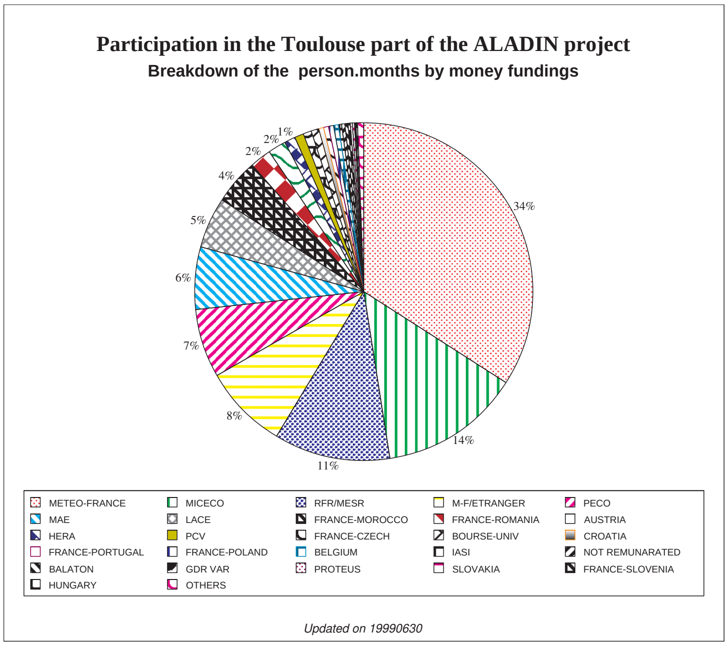
2. Participation in the Prague part of the ALADIN project

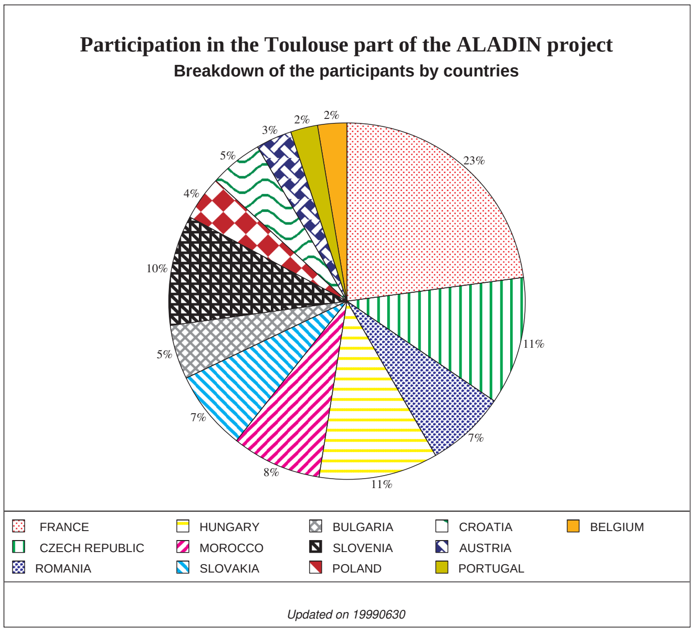


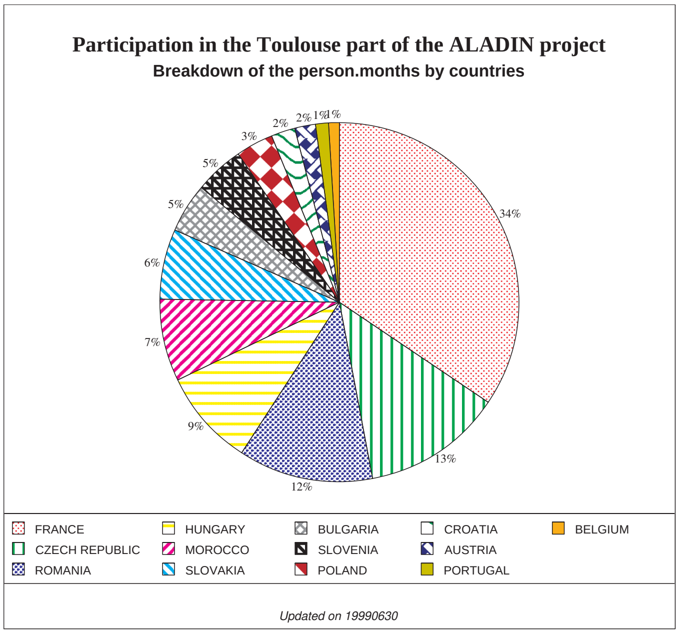


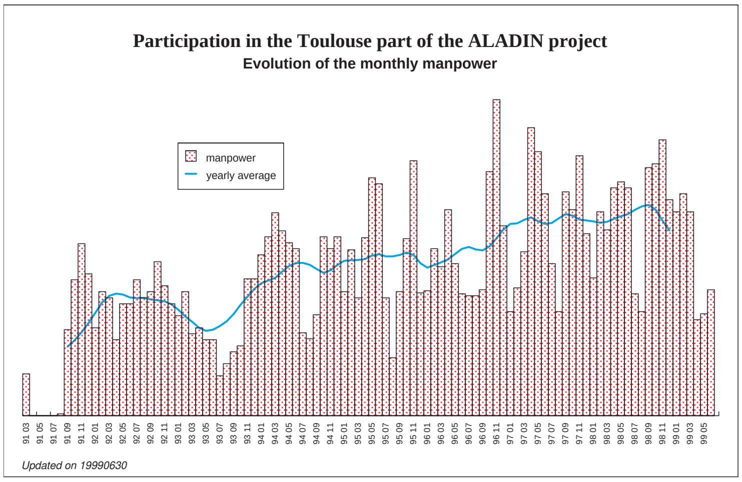


3. *Participation in the Toulouse part of the ALADIN project*

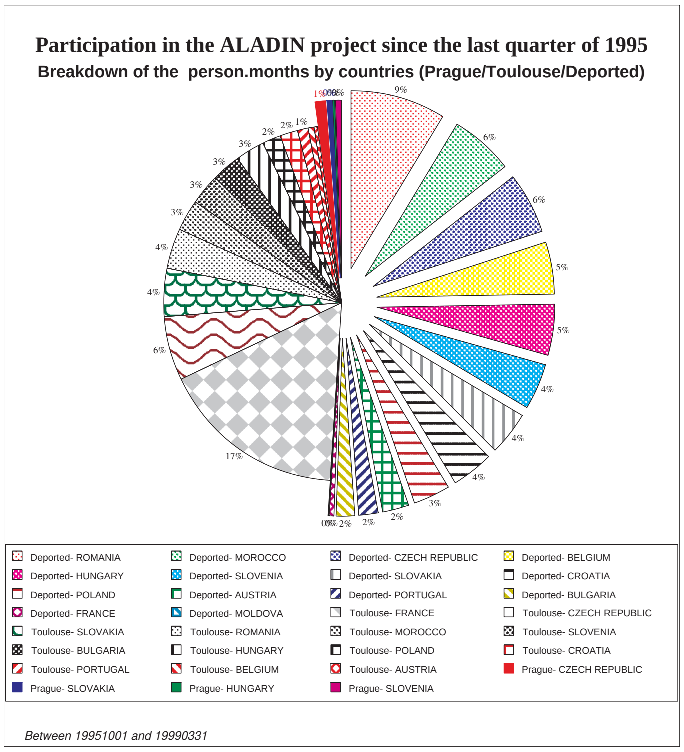


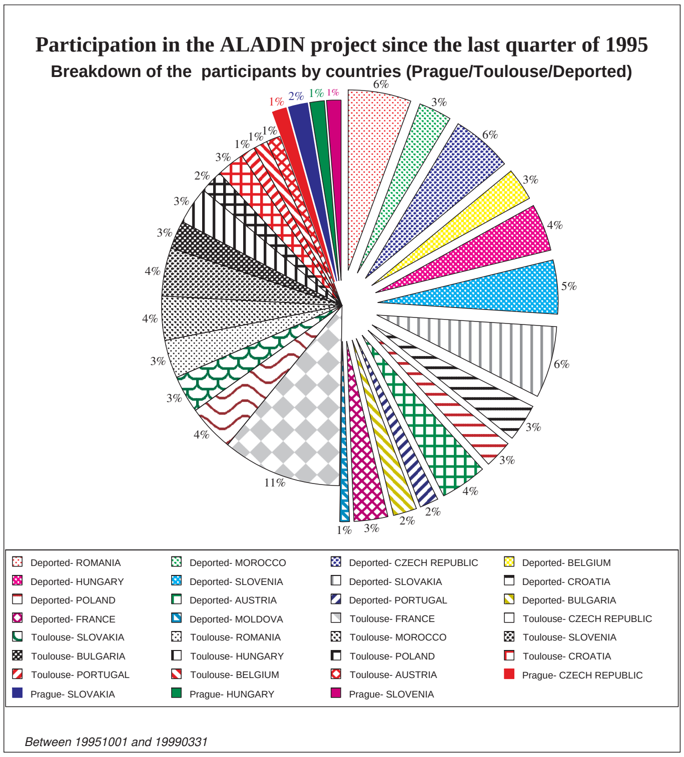


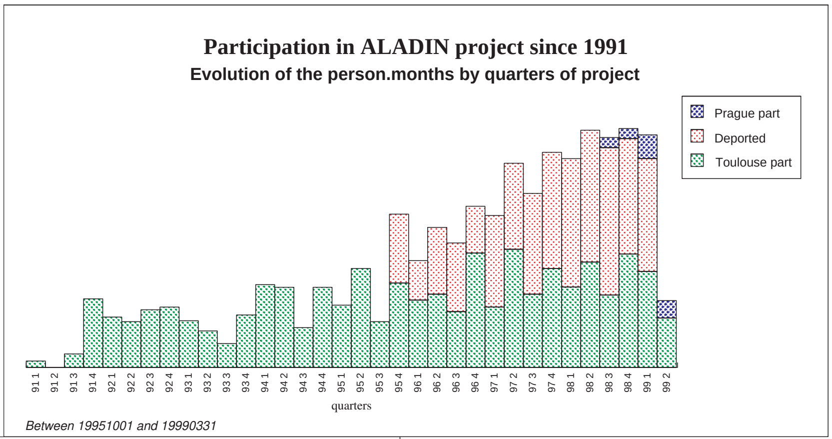


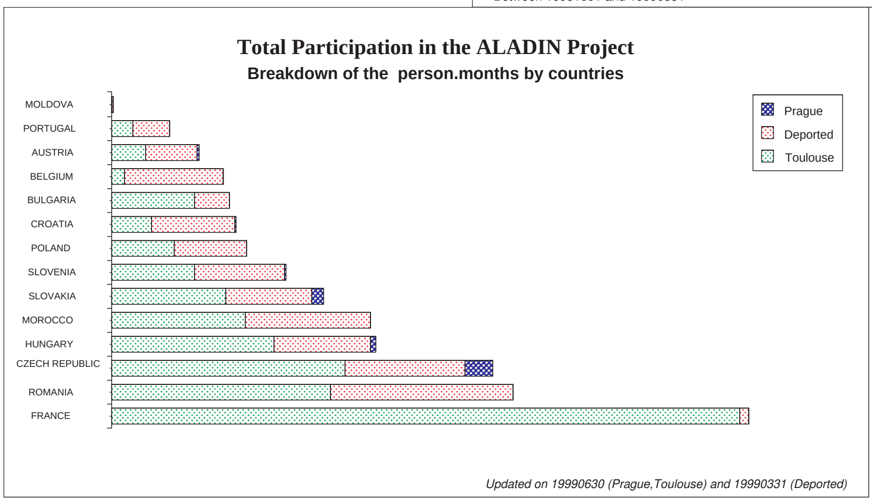


4. Prague/Deported/Toulouse participations in the ALADIN project

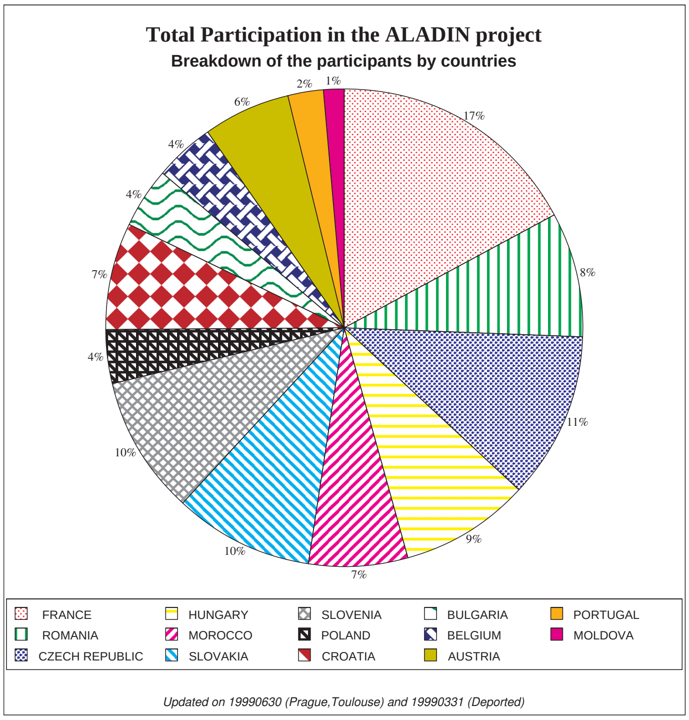


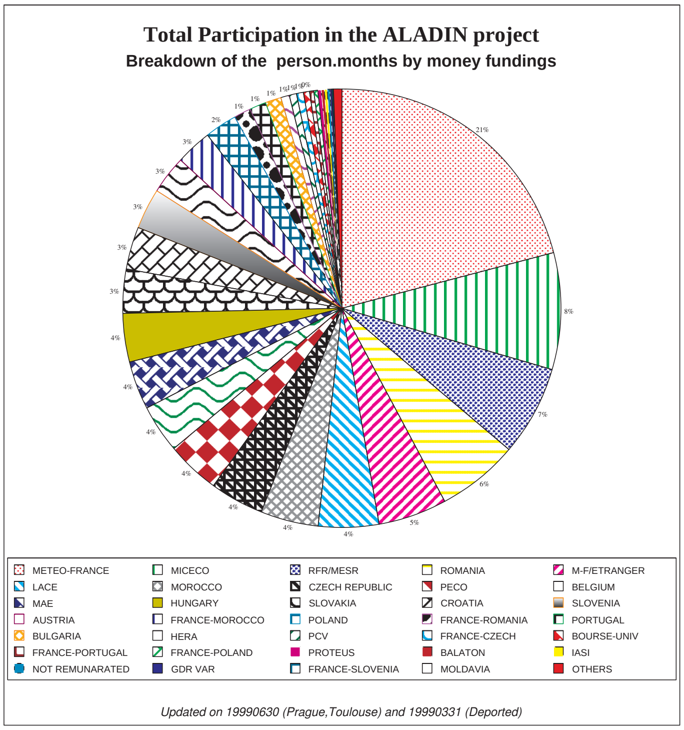


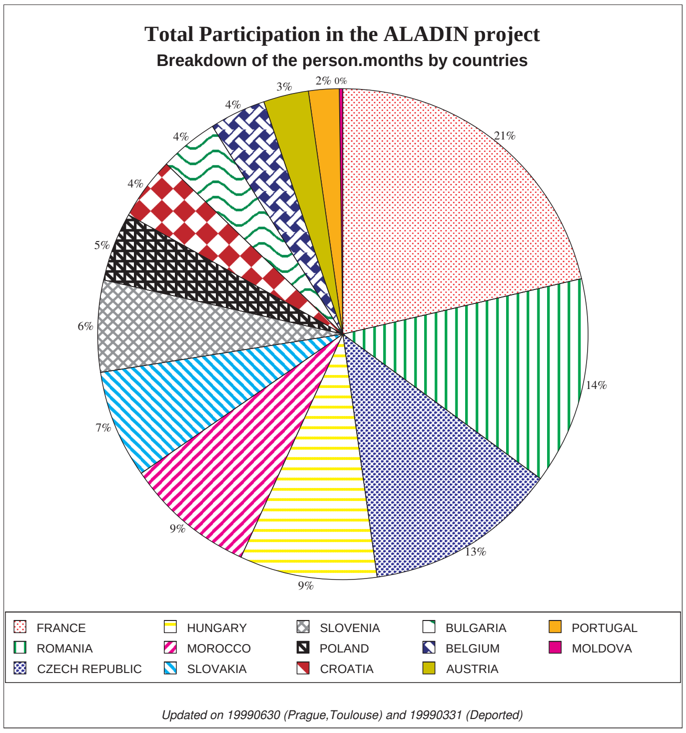




5. *Total participation in the ALADIN project*







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