

# **1st ALADIN Workshop on the Use of ALADIN/LACE in Forecasting Practice**

**June 25-26, 1996, Bratislava**

The operational use of the ALADIN products in different NMSs was presented including operative experiences, case studies, verification of ALADIN in comparison with ECMWF data, local post-processing ... Lectures were also given to recent developments.

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## **2nd ALADIN Workshop : ALADIN on workstation**

**September 16-17, 1996, Ljubljana**

In the continuity of ICAM96 (9th to 13th September 1996, Bled, Slovenia), a workshop about the use of ALADIN on workstation took place in Ljubljana. About 30 people attended the lectures prepared for the workshop, including generalities about ALADIN, technical developments and adaptations, visualisation tools, scientific studies and finally a presentation of the use of NWP winds as forcing to the Adriatic Sea in Bora cases by Pr. Orlic from Zagreb. The workshop ended with a round table on future activities concerning the workstation version of ALADIN.

This round table led to the following conclusions and actions :

### **CONCLUSIONS:**

- The organization of such a workshop is very important for those working on the workstation version of ALADIN.
- The participations on the workshop should be open any interested people around ALADIN and as well outside the LACE community.
- It is crucial to investigate the proper ratio between the resolution of the coupling model and the coupled one for the full understanding of the limits of application of the workstation version of ALADIN.
- A reference version is needed for the workstation versions of ALADIN. Ideally it should be very near to the CRAY version.
- More coordination is needed between the different groups working on the workstation version.
- A better exchange of information is necessary
- It is encouraged to install a workstation for the workstation version of ALADIN in the telecommunication center of RC LACE (Vienna) for post-processing purposes.
- Deeper scientific work can start on the workstation version after the final establishment of the proper technical conditions.

### **ACTIONS:**

- Compilation of the proceedings of the workshop.
- Compilation of modifications needed for the application of workstation version for DEC and SUN platforms. This is needed for the creation of the reference version.
- Based on the list of point 1., the estimation of time and manpower needed for the creation of the reference version in Toulouse.
- Proposition for the responsibilities of the coordination group around the workstation version.
- Collection of the information around the works performed on the workstation version for

- inclusion to the ALADIN Newsletter.
- Working starting on the determination of the acceptable ratio between the coupling model and the coupled one.

More details about the workshop can be found in the proceedings collected by our Slovenian colleagues and distributed to the participants.

## 3rd ALADIN Workshop : on Use of ALADIN products in forecasting practise and verification matters

**June 16-18, 1997, Budapest**

This workshop organized in Budapest (16-18 June, 1997) by RC LACE gave the opportunity to all participants to discuss the actual state of art as far as application of ALADIN products and verification are concerned.

The workshop was decomposed into different sessions and these sessions were followed by round-table discussions :

- Aviation meteorology
- Subjective evaluation
- HRID
- Objective verification (verification projects)
- Comparison of the performance of ALADIN model to other models
- Interesting case studies
- General problems, visualisation, WWW
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Proceedings of the Workshop and main conclusions of the round-table discussions can be asked to *horanyi++at++met.hu*.

## 4th ALADIN Workshop : Various implementations of the model within ALADIN Partners

**February 18-20, 1998, Toulouse**



During this three-day meeting, more than 35 persons attended different oral presentations or demonstrations and learned nearly everything about :

**ALADIN Workshop**  
on various implementations of the model  
within ALADIN partners

- the current state of eleven implementations of ALADIN in different countries, either on big computers or on workstations;
- the available applications in the ALADIN environment such as VERIF.PACK, ASCS and CHAGAL, Tkcs, dynamical adaptation, observation file handling and some operational control tools;
- the historical account of portability of ALADIN, an overview of hardware able to run ALADIN, ALADIN



future in distributed memory.

An important part of the workshop was dedicated to different discussions on :

- observation files and verification;
- post-processing content and graphics
- documentation;
- static oriented-diagnostic CANARI;
- satellite movie;
- GRIB on workstation;
- AWOC : redefinition of the AWOC-committee and its objectives;
- training;
- ...

The Minutes of these discussions have been sent to the representative of each country. Participants were given a paper copy of oral presentations transparencies at the end of the meeting. Others copies can be sent on request.

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## **5th ALADIN Workshop : Exploitation and future development of the NWP model ALADIN**

**June 10-12, 1998, Prague**

The fifth ALADIN workshop with the title "Exploitation and future development of the numerical weather prediction model ALADIN" was held at CHMI in Prague on 10 - 12 June 1998.

It had been already a kind of tradition to gather forecasters and modellers at the beginning of summer so that they can present their work in applications of ALADIN in the forecasting practice and exchange experience earned from the model use and special case studies. This year this basic aim was extended by the need to discuss the second long-term scientific plan for ALADIN. The composition of participants and the topics of talks and discussions therefore covered rather equally the development, operational and exploitation activities of the ALADIN community.

In the course of three days, 32 participants from 11 countries gave 28 talks. There were two principal round-table discussions on the model verification and subjective evaluation and on the long-range scientific plan.

- Very much attention was given to the verification issues of the model results. The concepts and expectations sometimes differ country by country which is logical due to different applications and roles of ALADIN in weather services. However, in spite of that differences and difficulties of unification the general conclusions on the model quality and behaviour were quite coherent and also instructional for modellers which justified the further exchange of such verifications and subjective validations in future.
- Very interesting presentations were given on the various model applications in the weather services. It was very interesting to see how the model was intensively used in the forecasting practice. The model results were even used straight in products customised for special users or underwent further statistical adaptation with the aim to improve their correctness and reliability.
- In the discussion on the long-range scientific plan it was noticed that transparency of project and its tasks had improved, which was found to be important for personal involvement of people in the team and the growth of their feeling of responsibility. The latter held for leading people in national environments which made the decisions about the use of available resources. The leadership of the project was therefore encouraged to proceed also in direction

of compact and simplified description and presentation of structure of the project and its tasks, their benefits and resulting priorities.

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## **6th ALADIN Workshop : Scientific development and new applications of the NWP model ALADIN**

**February 15-17, 1999, Bucarest**

This Sixth ALADIN Workshop took place at the National Institute of Meteorology and Hydrology in Bucarest and was entitled "Scientific development and new applications of the numerical weather prediction model ALADIN".

Model features, significant changes during the last period and model verification in Toulouse were first presented.

Presentations of different applications of ALADIN in Romania were given then : urban modelisation, transport of pollutants (with MEDIA model), marine meteorology with the comparison of two waves models (WAM from Max-Planck-Institut of Hambourg and VAGROM from Météo-France), ...

Some results of subjective and objective verifications were shown.

During a round-table discussions on scientific plan, recommendations for coordinators were proposed

The last day round-table discussions dealt with :

- the design of the common data sets for case studies and tuning the model;
- data assimilation
- AWOOC

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## **Minutes of the 7th ALADIN Workshop : Recent and planned operational exploitation of ALADIN model**

**November 17-19, 1999, Ljubljana**

It was generally recognized that the use of ALADIN NWP products has increased very much since more and more users have access to the enhanced data (special parameters & products, colourful visualization, etc.) and find better ways to use it in their decision-making process.

Therefore the efforts started to shift from the conventional use of standard forecast charts also towards the final part in the forecast production chain.

With the present and foreseen quality of the ALADIN we can expect that it will be so even more in the future. An exchange of information and maybe even common undertaking also in these fields within ALADIN community was recognized to be very valuable since it reduces the doubling of efforts (and avoids the employment of NWP human resources in the development of more technical applications).

- 1. Visualization

Model output must be presented in a way to enable the best possible interpretation by the forecaster or other end user. At least two possibilities exist:

- for producing the short and medium range forecast it is not bad having available always the fixed range of PREDEFINED products (combination of fields, fixed cross-sections, ...)
- INTERACTIVITY (via graphical user interface of visualising application) is not always needed, but for the nowcasting purposes it is desirable (e.g. overlaying of several observed fields and NWP products, etc.)

We have agreed that differences originate from the aim of the product; is it the forecaster or really the end-user. A special attention in the future should also be paid to the most proper design of "weather-on-demand" products where also the methodologies for accessing the NWP (or accordingly corrected by the forecaster) data base should be additionally investigated.

- 2. Nowcasting

The basic point was that nowcasting is strongly linked to other main topics: visualization, automatic production, ... The products of nowcasting must directly reach the user in the predefined form, usable and directly interpretable by him.

Also it is more or less clear that the NWP is only one of the tools for nowcasting (e.g. big role of remote sensing systems). So the combination of standard NWP forecast parameters with other techniques should be investigated (e.g. extrapolation, tracking, etc.).

In the case of convection nowcasting (following the definition of its main phases - Ducrocq, 1998) the role of NWP (ALADIN) products should be further investigated :

1. early warning
2. forecasting of convective initiation
3. analysis of convective development
4. forecasting of convective development

Ad 1. (&2) - objective analysis & diag.pack & derived indices

Ad 4. - e.g. embedding the already present thunderstorms in the fields of forecast parameters (bogussing)

Case studies are encouraged for this purpose - especially with dense observation networks (e.g. MAP field experiment).

There already exist more ways of collaboration and exchange of information about nowcasting within ALADIN community (e.g. COST78 contacts, ICCED initiative, EUMETNET projects like TIPS - TAF Interactive Production System, etc.).

- 3. Verification

Verification is a topic, which will be in near future undergoing major changes, at least what considers the high resolution modelling.

- Traditional way of verification should still remain, but it has been heard that much less effort should be put into developing procedures for producing scores. Anyway, all but few services regularly produce traditional scores for their operational version.

- Everybody is encouraged to finding new approaches, so that the progress in NWP would reflect here as well. As an example, a time lag of 1 hour in an event forecast causes the traditional scores to be awful.

- Case studies are a suitable way of verifying special features of the model, but cannot present a regular approach for producing objective information.

- Verification on the side of the end users or from their point of view is also very much encouraged, because in this way more can be known about the true value of the model. No doubt, it is users, not the modellers, who will always judge the model quality. Also this is an additional information that may be used, apart from other scores.

- 4. Applications

A better overview of existing applications of NWP is desirable within the ALADIN community, so

the decision towards a draft inventory was taken (see Decisions). Everything else has been already told at the special discussion about the applications.

- 5. Automatic forecast generation

This is an absolutely necessary thing to be done and researched. Topics include among others the improvement of design and maintenance of NWP data base which would be suitable for automatic production, the generation of probability forecasts from ALADIN, etc. A motion was that this is a special topic (among others) for the next Workshop.

- CONCLUSIONS

Decisions:

- In order to start the draft inventory of ALADIN NWP applications a questionnaire will be prepared in Slovenia by Dec. 6th.. The questionnaire will be put into circulation in Jan. 2000.

The way of centralized maintenance of the inventory should still be discussed.

- Special session for Automatic forecast generation should have place at the next Workshop, in Brussels.

It was also proposed that besides the usual forecasting themes the above listed topics of discussion should be announced for the next "users" workshop in order to increase the interest towards the end-users of ALADIN products.

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## **Minutes of the 8th ALADIN Workshop: Scientific development and new applications of the NWP model ALADIN**

**June 19-20, 2000, Cracow**

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## **Minutes of the 9th ALADIN Workshop: Recent and planned operational exploitation of ALADIN model**

**November 6-8, 2000, Bruxelles**