

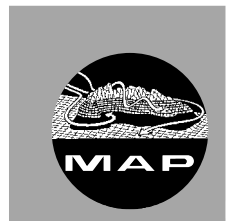
The Mesoscale Alpine Programme

newsletter



MAP

no. 18  
november 2003



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The MAP newsletter invites short articles on MAP-related topics. **Contributions** to the MAP newsletter should be sent to the editor Georg Mayr. **Please deliver your text (graphs included) in a camera-ready format** (pdf or ps in A4 format, see templates at the MAP Data Centre), and be sure that figures are suitable for black and white reproduction.

**Your contribution must not exceed 2 pages!**

Camera-ready format:  
 16.0 cm (6.3 inch)

Title  
 Author(s)  
 Address(es)

Text

25.0 cm (9.8 inch)

➡ **Deadline for contributions to the MAP newsletter No. 18:**

**28 February 2003 (to appear in April 2003)** ⬅

## Editorial – A Good Bye to MAP

The publication of the Special Issue of the QJRMS at the beginning of 2003 is clearly marking a new milestone in the life of MAP.

The MAP steering committee met after the MAP meeting in Brig and discussed various issues. Noteworthy, the MSC decided to publish the entire MAP reanalysis of ECMWF on its internet site, and to encourage use of these new data within the MAP community. Innovative work on data assimilation at the mesoscale is also made possible by the release of the BUFR-formatted observation files, and this is very much encouraged. The correction of the dry bias of some radiosondes (RS) is also progressing well, and the MSC decided that the original and bias-corrected RS data will be transferred to the MAP Internet site. We also discussed how to ensure a smooth transition of the MAP Data Centre from ETH to MeteoSwiss.

An important discussion took place on the future of MAP. It was decided to pursue three lines of actions. First, a panel chaired by R. Smith and H. Volkert will organize a thorough assessment of the MAP results, with the help of all Working Group chairs. A series of publications and possibly a special conference will then be organized to draw formal conclusions. Second, the feasibility of a “forecast demonstration project” will be explored by a task group. The idea is to build a multi-model ensemble at the non-hydrostatic, meso-gamma scale, and to use this in real time to issue probabilistic predictions of intense rainfall in the Alpine area. The key point here is to select end-users ready to use and assess these experimental predictions. Third, a series of prospective workshops in mountain meteorology will be organized in conjunction with upcoming conferences. These will be largely open outside the MAP community. New ideas will emerge from this process.

This editorial is a nice occasion for me to say good bye to MAP. As many of you know, I have been recently appointed Head of the Research Department at ECMWF. These new duties are not compatible with a strong involvement in MAP and I have decided to withdraw from my position as chair of the MSC. My involvement in

MAP dates from the very first workshop in ETH, Zurich, in 1994. At this workshop, we discussed all sorts of motivations and possibilities to launch a new big program in Alpine meteorology. On a very short notice (2 minutes!) I was offered by Huw Davies to chair a panel on the timing and objectives of the field phase. I was fortunate enough to lead the panel to some sort of consensus, which actually, believe it or not, was quite close to what the SOP really became. Later on, I was offered to chair the Scientific Committee of MAP for 3 years. I enjoyed it so much that I volunteered for two additional terms, spending 9 years of my life heavily committed to this program. This has been a very exciting and rewarding experience for me, and I will never forget some key instants of the SOP. We have achieved a very significant progress in mountain meteorology and small scale NWP. The MAP community is strong and ready for more: I wish you all the best of luck!

Philippe Bougeault

# The MSC deals with the Future of MAP

Andrea Rossa, MeteoSwiss, 8044 Zurich, Switzerland

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Prior to the MSC Meeting the outcome of the discussion on the future of MAP was entirely unclear. Indeed, MSC chairman Philippe Bougeault introduced the subject by presenting two conceivable basic lines of action re the future of MAP without prejudice and not knowing what the outcome was going to be, what the MSC's echo, conservative or progressive?

A number of other important items needed to be addressed, so the continuation of the MAP Data Centre (MDC) after the end of the current funding, the final reports of the data quality effort DAQUAMAP (see "DAQUAMAP Activities" on page 6) and the SOP reanalysis project, the handling of the dry bias problem of Vaisala radio sondes, and the societal impact component of MAP. In the following a report is given of the fifth MAP Steering Committee (MSC) Meeting took place in Brig, Switzerland, 22-23 May 2003, in the framework of the joint ICAM/MAP Meeting 2003 (see "Short Conference Report on the ICAM/MAP Meeting 2003" on page 12).

## ■ Future of MAP

The future of MAP was the outstanding topic of the MSC meeting and it turned out to be quite exciting. Ph. Bougeault opened the discussion by introducing two conceivable basic lines of action. The first, conservative approach would refrain from encouraging any new actions or projects, conclude the harvest the results of ongoing research over the next two years, and discontinue MAP, for instance by the end of the current funding cycle of MAP-NWS, i.e. end of 2005. A strong final report on MAP, including the progress in NWP since 1999, is maybe the most important short term goal to be reached by the MSC in this scenario.

On the other hand, given sufficient enthusiasm and interest, MAP can support and help launch one or several project/activities well into the next five years or so. For instance, MAP could set out to demonstrate the potential for forecast improvement by means of a WWRP Forecast Demonstration Experiment (FDP). It would be

certainly regrettable not to show the progress that lies at hand. However, 2005 is too short a horizon to establish and conduct an FDP, as some two years are needed to get it off ground, plus bearing in mind that more than one season is needed for an FDP for the rather rare events under investigation. Ideally, such an FDP would be led by the application-oriented NWSs. The MSC established a group of people that will explore the feasibility of an FDP, maybe in the Lago Maggiore area, and will review this issue at the its next meeting in January 2004.

After having considered bringing MAP to a full stop, the discussion became quite lively and acquired more a prospective character. It was noted that MAP evolved from a main goal of ALPEX - Foehn - that remained unsolved because of the weather encountered during its field phase. A knowledgeable group of scientists should think about the important open and challenging questions after MAP that would point to a successor field project and excite a new generation of young scientists. Joachim Kuettner's vast experience tells him that if an experiment goal is missing, MAP - and more importantly the MAP community - will dissolve. There was a strong agreement that the network established by MAP is an ideal platform from which to start new activities and needs to be sustained. It was proposed to establish a new vision in the course of the next couple of conferences, even to organize dedicated science prospective workshops in order to identify unsolved questions, compile the MAP legacy, define further field programmes, and - find a new name. A Science and Prospective Group (SPG) led by Ron Smith for the time being, has been established. It should be extended with experts coming from outside MAP in order to not to be fixed on the same set of problems. The SPG committed to organize a first prospective workshop.

After an extended and quite worthwhile discussion Ph. Bougeault summarized that four lines of actions should clearly be pursued in order to bring MAP to a satisfactory end:

- first, the MDC should be secured until and beyond 2005 (see below);
- second, a specific process should be started to formulate the scientific conclusions of MAP;
- third, the feasibility and interest of a FDP should be explored;
- fourth, a wide prospective discussion on the future of mountain meteorology should be organized.

There are several options for the format of the MAP's scientific conclusions, but it was agreed that a written document is absolutely necessary, while a final conference is an option. The MSC decided that the current Working Group chairpersons will form a panel, chaired by R. Smith and H. Volkert to elaborate a proposal regarding the format and timing of the assessment of MAP results. The MSC will review the proposal of the panel and decide on these issues at its 6th meeting.

### ■ The MDC beyond 2005

Securing the MDC up to and beyond the end of 2005 is a core concern of the MSC. It drafted a request to MeteoSwiss regarding the possibility of integrating the MDC into the central MeteoSwiss data base (Data Ware House, DWH). The original request of having the system set up identically to the present system was relaxed in order not to pose too strict constraints. However, it is desirable that today's programs and procedures of data retrieval be usable in the future installation. The level of comfort and support will depend on the level of requests. P. Binder ensured that MeteoSwiss is faithful to its commitment given to MAP so far, so that a scenario of more restrictive data access is very unlikely. A formal statement was adopted by the MSC concerning the MDC beyond 2005. In order to ensure a smooth transition process and correction of possible problems, the new MDC facility should enter into operations early in 2005.

### ■ MAP SOP reanalysis

Christian Keil presented the final report, of the MAP SOP reanalysis performed at ECMWF

(Tech. Memorandum 401 available at ECMWF, see "The ECMWF Re-Analysis of the MAP SOP: Final Report Available" on page 9), pointing to a number of interesting aspects of the reanalysis. The most spectacular problem found, the drying of the atmosphere during IOP-2a that suppressed convection in numerical simulations conducted by E. Richard, turned out to be an isolated phenomenon (see report for the cause of the drying). The MSC decided to:

- publish the entire reanalysis through the MDC;
- encourage the MAP community to use the reanalysis for extensive experimentation, clearly communicating the caveat re IOP-2a;
- promote the use of the ECMWF reformatted observation files for further DA experimentation, as the project proves that the data set is of high quality;
- formally close the project.

### ■ Vaisala dry bias correction

R. Steinacker presented an assessment of the correction scheme. The impact of the correction ratio between corrected and uncorrected values yields up to 15% of difference in the total column vapour for the radio sounding of Cagliari, and is of the same order for other stations. I.e. it is a systematic and rather serious bias. It was noted that it is worthwhile to have the corrected data available soon, even only a part of them, as some groups work with data sets that are limited in time and space. Moreover, the correction procedure will be accessible for all data provider, even if some parts of the implemented algorithms were derived from grey literature.

Small humidity differences can be crucial for the onset of convection, so that the MSC decision to do the reanalysis without waiting for the bias correction, turned out to be unfortunate. The reanalysis can not be redone on the present ECMWF computer system without a dedicated, i.e. specifically funded effort. This dry bias problem is much more serious for ERA-40, as the details of old radio sondes are likely to be lost. A reanalysis taking into account the dry bias is conceivable but maybe a few years down the road when other data problems are solved/

cleared. However, global (re)analyses are often used as a starting point into which additional observations are included, e.g. by nudging. This alleviating factor could be an additional recommendation to the MAP community concerning this problem. Also, the MSC decided to have the results published in the peer reviewed literature in order to allow referencing in other papers. The original and bias-corrected radio sonde data are to be transferred to the MDC, the users alerted concerning this problem.

### ■ Societal Impact component

Ph. Bougeault conveyed to the MSC the congratulations of the WWRP for the results of MAP and the organization of the SIW. WWRP also urged the MAP community to come forward with a proposal for a Forecast Demonstration Project (FDP). The WWRP concept of FDP means that new forecasting tools are used in real time for a certain period, with involvement of a selected set of actual end users. At the end of the demonstration period, an objective assessment of the benefits to the end users panel must be performed. The Societal Impact Workshop (SIW) in Bad Tölz, 24-25 Oct 2002 provided room for good discussions but little work has been initiated so far. The Lago Maggiore Strawman proposal has been presented to the Ticino water authorities but echoed only a general interest. There is the need to formalize the idea and aim at making an addition to what is currently being done operationally. The MSC decided to postpone further invitation of societal impacts spe-

cialists to the MSC until a clear decision has been made on whether MAP will develop a FDP or not.

### ■ MSC Chair succession

Finally, MSC chairman Ph. Bougeault has moved to the position of head of research at ECMWF and wished to step down from the MSC chair position, preferably with no time delay (see Editorial). It was pointed out that the new perspectives on the future of MAP make it necessary to re-consider the implications tied with chairing the MSC, and that the institution should be weighed as well as the person when deciding upon the new MSC chair, keeping the NWSs strongly involved in MAP. Ph. Bougeault accepted to carry on chairing the MSC until the next MSC Meeting. Joachim Kuettner, on behalf the MSC, addressed words of sincere appreciation and gratitude to Philippe Bougeault for his effective leadership throughout the programme, and, specifically, during the field experiment. The new MSC chairman will be elected in next MSC Meeting in January 2004.

### ■ IGP Meeting

The IGP decided to propose to dissolve this panel, a process which still requires consultation of all the IGP members. The MSC then will bear the main responsibility for leading MAP into the future. Th. Gutermann, chairman of the IGP, becomes a full member of the MSC upon discontinuation of the IGP.

## DAQUAMAP Activities

Christian Häberli, Dept. for Meteorology and Geophysics, 1090 Vienna, Austria

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### ■ DAQUAMAP for surface data

The project DAQUAMAP (Data quality control in MAP) was finished in the first half of 2003. The results are available from the MAP database at: <http://www.map.ethz.ch/owa/mappub/>

[query\\_q\\_sopsurface?sdate=07.09.1999&edate=16.11.1999](http://www.map.ethz.ch/owa/mappub/?query_q_sopsurface?sdate=07.09.1999&edate=16.11.1999)

Users can retrieve:

- Flags for measurements which violated a 'global range check'. This global range check

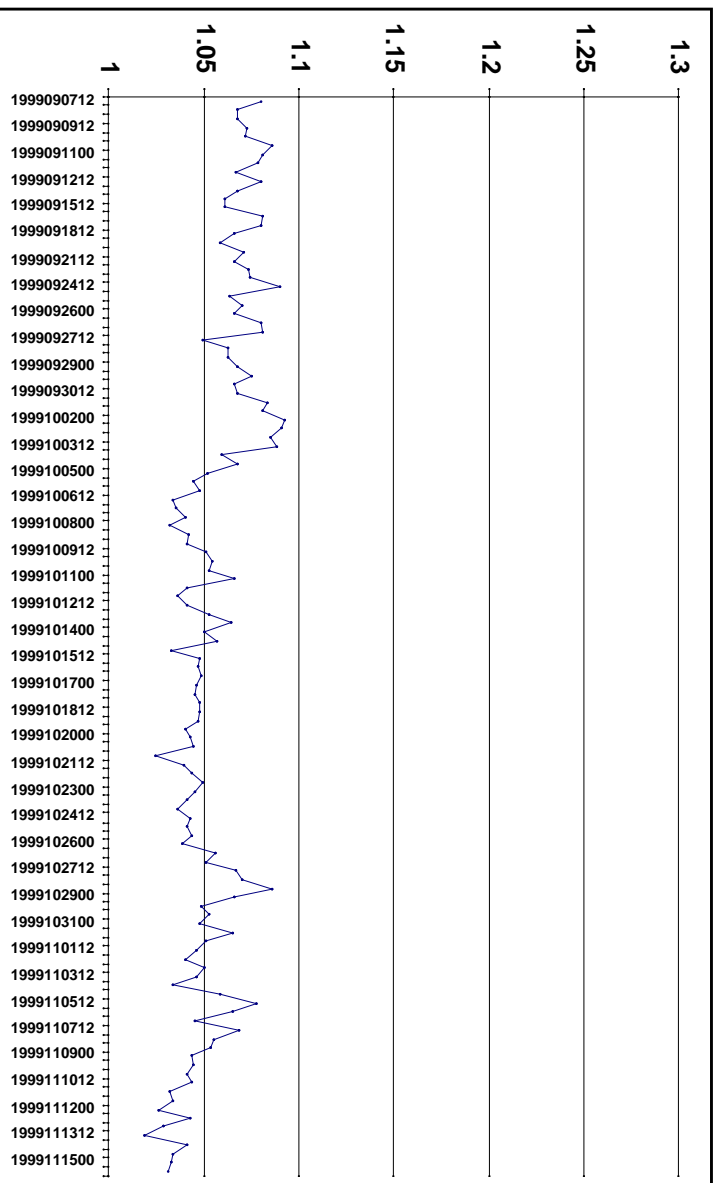
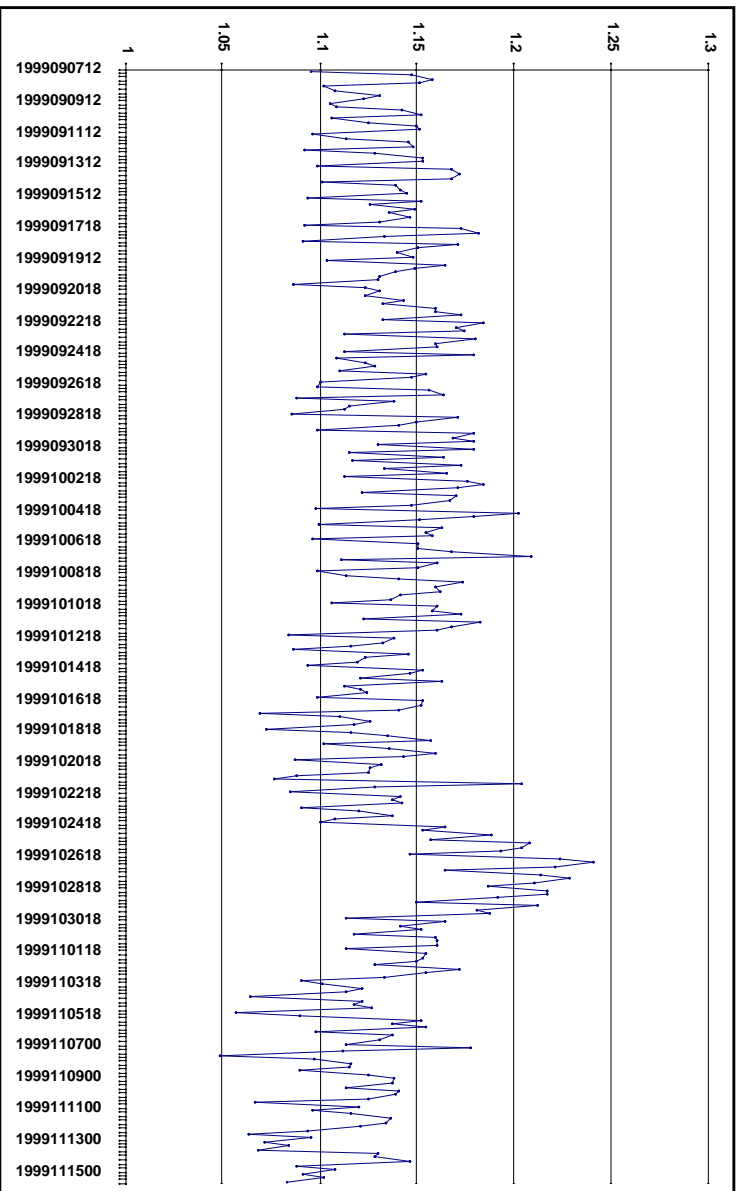


Figure 1. Ratio of precipitable water after and before the correction for Cagliari (16560, upper panel) and Palma de Mallorca (08301, lower panel).

consists of a comparison of each value from non-GTS network data against the maximum + threshold and minimum - threshold. The extreme values were determined from the GTS network in the whole domain. The threshold is 10hPa for pressure, 10K for potential temperature and the humidity measure ( $\theta - \theta_e$ ) and 10m/s for the wind components.

- Flags for humidity values where the dew point is higher than the temperature.
- For each suspicious value the deviation is stored in the database. Suspicious values are those where the deviation for the station under consideration exceeds the upper quartile + 3 \* interquartile range or lower quartile - 3 \* interquartile range.
- The median value for the MAP SOP of all deviations for pressure, temperature, humidity and the wind components for each station. Here we assume, that the whole SOP contains a mixture of weather types and therefore the provided values reflect the systematic.

Based on these results users of the MAP database can:

- Exclude erroneous and/or suspicious values.  
Assess the magnitude of suspicious values.  
Remove the systematic error from each individual measurement.

Users will find all further information and explanations at the internet link given above.

A technical final report is in the review with the DAQUAMAP review panel, which is chaired by Hans Volkert. This report will be submitted to the MAP steering committee and then be published on the internet. A scientific final report was submitted as a publication in a reviewed journal.

## ■ DAQUAMAP II: Radiosonde Humidity Data Correction

The method and some results for the correction of Vaisala RS80 radiosonde humidity measurements were presented at the MAP meeting in

Brig (Häberli et al., 2003). One version of the correction takes into account outliers, the temperature dependence error, the time lag error, the dry bias due to chemical contamination (which is a function of sonde age and relative humidity), the sensor arm heating error, the ground check and the sensor aging error. A second version treats all errors beside outliers with one single empirical function. The impact on the correction based on results for the version 1 algorithm on precipitable water is shown in Fig. 1. The mean age of the radiosondes flown at Cagliari (16560, upper panel) was 3.75 years compared to 0.5 year at Palma de Mallorca (08301, lower panel). This explains the much stronger impact of the correction for the Cagliari data than for Palma. The 'diurnal cycle' visible in the upper panel is due to the fact that for noon soundings another production batch of radiosondes was used than for the other observation terms: The noon ascents were performed with approximately 1.3 year old sondes whereas at all other times the sondes had an age of almost 4 years.

For version 1 of the correction sounding meta data like sonde serial number, ground check data and pre-launch reference measurements are required. It was possible to collect this type of data for 10 stations in the MAP high resolution data area. The second version of the correction does not require any meta data. Therefore it is possible to perform the calculations for about 40 stations in the MAP high resolution data area and in its close vicinity.

Currently the calculations are being performed and the MAP database administrators are evaluating how these data can be made accessible to the users in the most convenient way. A publication describing the algorithms, the results and the impact is in preparation.

## ■ References

Häberli, Christian, 2003: "Assessment and Correction of the Dry Bias In Radiosonde Humidity Data during the MAP-SOP." Int. Conf. Alpine Meteorology and MAP-Meeting 2003. May 19-23, 2003 Brig, Switzerland. Extended Abstracts Vol. A. Publications of MeteoSwiss. **66**. 221-224

# The ECMWF Re-Analysis of the MAP SOP: Final Report Available

Christian Keil, ECMWF, Reading, UK

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The ECMWF Re-Analysis of the MAP SOP: final report available Christian Keil, ECMWF, Reading, England.

A re-analysis of the Mesoscale Alpine Programme (MAP) Special Observing Period (7 September to 15 November 1999) has been performed at ECMWF. Substantial upgrades in the global data assimilation system 4D-Var (T511/159L60, horizontal resolution approximately 40km) combined with special MAP observations provide a new reference description for studies on mountain related atmospheric phenomena. In the Alpine region, three times more humidity observations from radiosondes and five times more humidity observations at surface stations than in operations~1999 have been assimilated. Four out of 16 European windprofilers were not used because of variable quality. A control analysis excluding the MAP special observations is available, too. Some key results:

1. Assimilating MAP observations slightly moistens the troposphere in the southern Alpine region, southern France and over the Adriatic Sea. Conversely, European windprofilers led to slightly drier conditions south of the Alps.

2. Windprofilers reinforce dynamical features as shear zones and jet-stream winds (IOP15). However, windprofilers operated at different microwave frequencies (detecting different vertical ranges) don't report necessarily consistent information when deployed at the same location (e.g. VHF and UHF Lonate). Here, a cross-check of the observed overlapping data is necessary prior to its assimilation.

3. A case-study-type investigation of IOP2a shows that windprofiler data may increase the subsidence and lead to a drier boundary layer. This is caused by an erroneous feed-back on the humidity field through variations in the humidity background standard deviation calculation

(in 4D-Var) and not through the model dynamics.

4. The remarkable agreement of rainfall time series in the Po catchment highlights the model skill. The model is able to capture the different precipitation patterns, fingerprints of different flow regimes, south of the Alps, e.g., during IOP2b and 8.

5. Validation with model-independent GPS derived integrated water vapour contents shows that the humidity field describes well the interdiurnal humidity variations at southern Alpine GPS stations (Fig.1). However, the analysis seems to be slightly too dry compared with GPS measurements. For instance, the mean analysis increments of north-Italian GPS stations depicted in Fig.1 amount to 2.9 kg/m<sup>2</sup> at Genova and 0.5 kg/m<sup>2</sup> at Medicina. Note that the dry bias is even larger for the operational analysis in 1999.

The following data have been transferred to the MAP Data Centre (MDC): (a) All uniformly formatted MAP-SOP observations (in BUFR format). (b) 3 hourly re-analyzed fields (variables Z, U, V, W, T, P) on model levels for the European region together with (c) analyzed fields of the control analysis using the same ECMWF model system excluding the additional MAP-SOP data.

This shall allow detailed investigations dealing with the MAP SOP, for instance, performing high-resolution model forecasts or mesoscale data assimilation experiments.

Reference of final report:

Keil, C. and C. Cardinali, 2003: The ECMWF Re-Analysis of the Mesoscale Alpine Programme Special Observing Period. ECMWF Technical Memorandum 401. Available from ECMWF, Shinfield Park, Reading, RG2 9AX, UK.

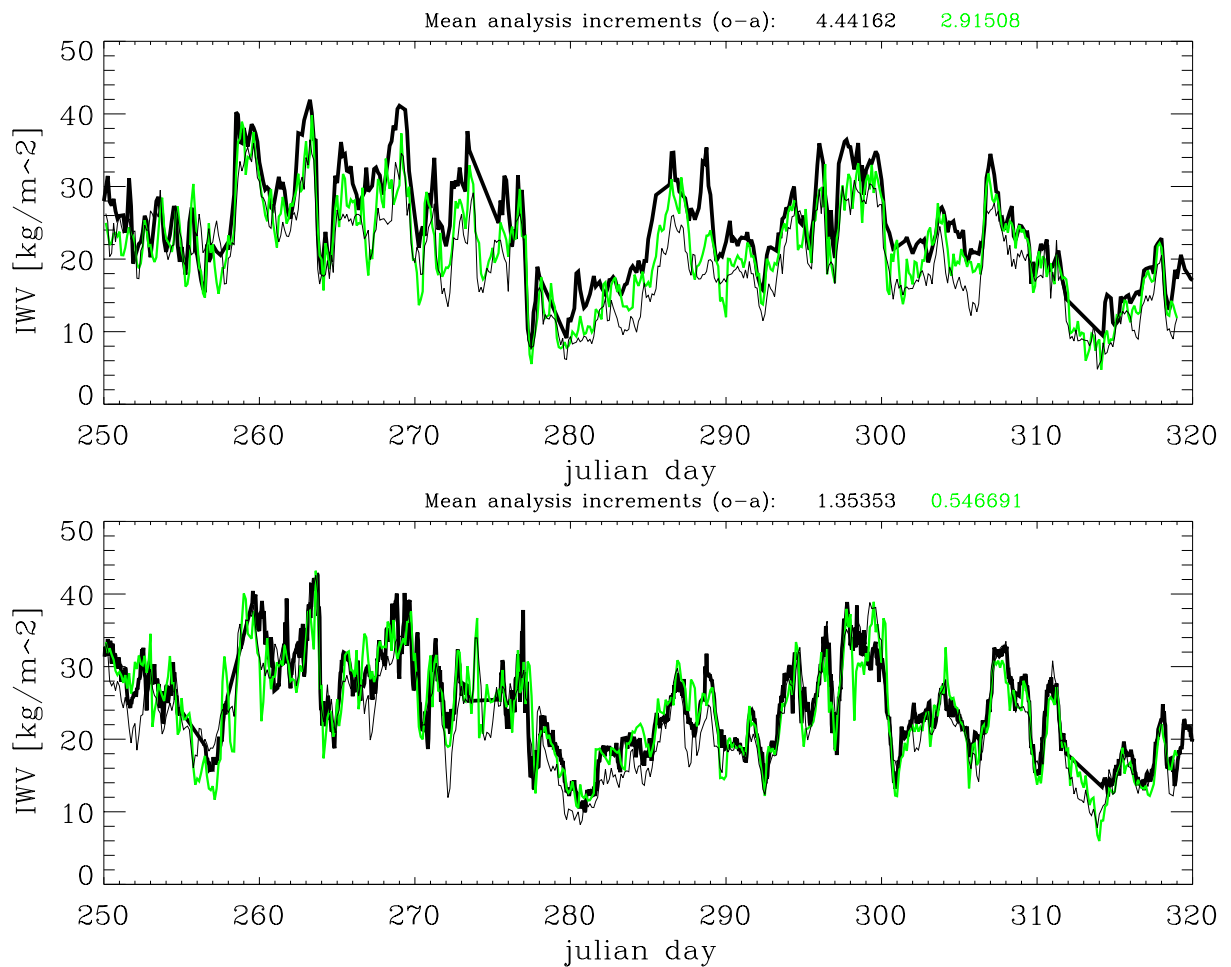


Figure 1. Time series of GPS derived integrated water vapour observations (thick line) and total column water vapour of MAP-RA (gray line) and operations 99 (thin line) for Genova (above) and Medicina (below) for the full SOP.

## MAP Data Centre Status

Hans Hirter, IACETH, 8093 Zurich, Switzerland

Last January we switched to the new MAP database server. We hope that the user did not notice too much. For details on the technical setup see article 'MAP Data Centre Status' in MAP newsletter no 17.

### ■ MAP reanalysis usage

The MSC decided to publish the entire reanalysis through the MDC and encourages the MAP community to use the reanalysis for extensive experimentation. You will find the data in the

SOP data section under 'Models'. ECMWF surface reanalysis and model level fields, the control run, and the bufrized MAP-SOP observations are available. Table 1 shows an overview of the file access on the reanalysis data at MDC during the last 11 months.

**Table 1:**

| Data category                 | # Data files | # Re-adme files |
|-------------------------------|--------------|-----------------|
| ECMWF reanalysis gridded data | 34           | 194             |
| ECMWF gridded data (control)  | 759          | 352             |
| MAP bufrized data             | 34           | 71              |

Table 1 File access on reanalysis data at MDC in the last 11 months.

#### ■ MAP Data Centre network traffic

During the last months attacks from hackers over the Internet has tremendously increased. With the network traffic tool MRTG we get an overview of the situation on a daily, weekly, monthly, and yearly basis. Figure 1 shows the complete network traffic at MDC in the last 12 months. The full system backup produces the monthly peeks.

The actual amount of data at MDC is 134 GB. That includes data files, the oracle database and operating system files. An incremental back runs every day and a full backup is scheduled monthly.

#### ■ MAP Data Centre Web access statistic

The following statistic relates to the last 9.5 months of Internet traffic at MDC. On average, the MDC had 5'500 requests per day or 1'574'411 accesses in the last 9.5 months. Counting the various pages on our site, we got 2'475 requests for pages per day or 708'540 requests for pages per 9.5 months. Figure 2 shows the monthly traffic in the last period. The average data transfer rate was 217 Mbytes per day or 60'180 Mbytes per 9.5 months.

The source of the difference between 'requests' and 'requests for pages' are the visits from all

the different search engines. The number of 'requests' means the total number of files downloaded from our server (including graphics), and the number of 'requests for pages' just counts the various pages on our site.

The number of distinct hosts (the number of different computers from which requests have been made) was 45'715 hosts. The domain report list contains more than 100 different countries from which files were downloaded. Table 2 shows the top-ten domains of computers which requested files. If we look at this list a little closer, we find countries all over the world like Israel, Saudi Arabia, India, China, Malaysia, Taiwan, Australia, Peru, Costa Rica...

Table 1 Top ten domains of computers which requested files.

| requests | %bytes | domain                                 |
|----------|--------|--|
| 481820   | 27.20% | .net (Network)                         |
| 297293   | 20.26% | .com (Commercial)                      |
| 282864   | 18.53% | .ch (Switzerland)                      |
| 209150   | 12.10% | [unresolved numerical addresses]       |
| 77103    | 3.90%  | .it (Italy)                            |
| 19508    | 2.80%  | .at (Austria)                          |
| 38988    | 2.44%  | .fr (France)                           |
| 22736    | 2.00%  | .de (Germany)                          |
| 2210     | 1.97%  | .org (Non-Profit Making Organisations) |
| 39370    | 1.75%  | .edu (USA Educational)                 |

The top-two browsers with the largest numbers of requests are Netscape with 104'025 and Internet Explorer with 509'554 requests. The Internet Explorer shows much more requests than all other browser together. As for the operating systems, we detected 545'894 requests from Windows, 113'882 request from UNIX, and 18'127 request from Macintosh systems. But the major part was an unknown operation system or search engines. The operation system of search engines and surfers which access the MDC through a firewall give no information about their operating system.

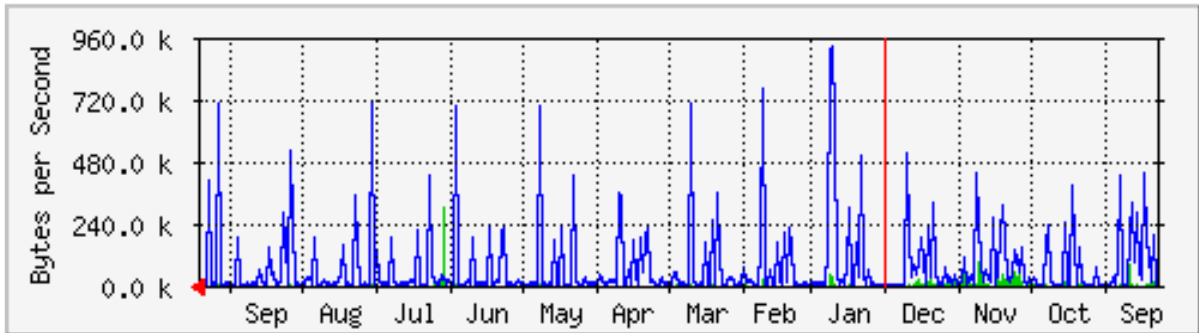
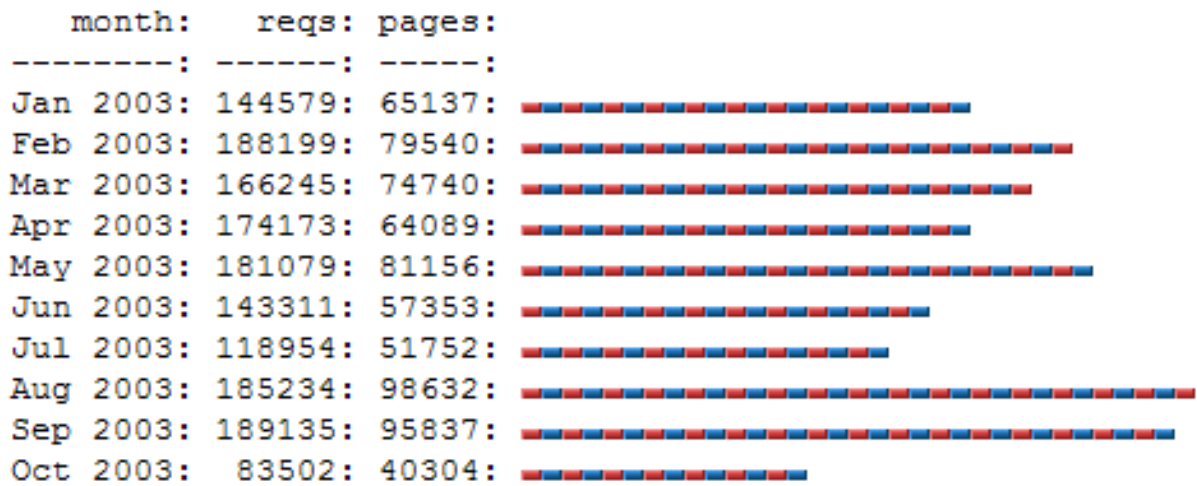


Figure 1. One day average network traffic at MDC in 2002/2003.

Each unit (—) represents 3,000 requests for pages or part thereof.



**Busiest month: Aug 2003 (98,632 requests for pages).**

Figure 2. Monthly Web traffic at MDC in 2001/2002.

## Short Conference Report on the ICAM/MAP Meeting 2003

Andrea Rossa, MeteoSwiss, 8044 Zurich, Switzerland

The annual MAP Meeting 2003 was jointly held with the 26th International Conference on Alpine Meteorology (ICAM) 19-23 May 2003 in Brig, Switzerland, almost exactly ten years after the devastating Brig flooding event, which not

only left a mark on the town but had quite an impact on the formulation of MAP. Conferences on Alpine Meteorology were regularly organized as bi-annual events since 1950. You may recall that in 2001 responsible organizers agreed that

ICAMs should be held in alternating fashion with the Mountain Meteorology Conferences of the American Meteorological Society (MMC AMS). Also, for the next future the MAP Meetings may be combined with the ICAMs and, possibly, with the MMCs, this being the reason for the shift of ICAM 2002 to next odd year, i.e. to 2003 for the first edition of ICAM/MAP. As a matter of fact, the MAP Meeting 2004 will be jointly held with the AMS MMC for the second time, and MAP has already been invited to join ICAM in 2005.

The conference was a good success in a number of ways. The number of participants, coming from NN countries, missed the mark of three hundred by only little. About 70 oral and close to 130 poster presentations provided the scientific substance of the conference. The international programme committee chaired by Christoph Schär did an outstanding job in carefully

assorting a very attractive sequence of talks for the plenary session, covering the core MAP subjects, the more traditional, application-oriented themes of the ICAM, and a session on societal impact. Ample time was allocated for the poster sessions, which were held in the large conference hall. Conference proceedings with extended abstracts have been published by MeteoSwiss, and slides of part of the oral presentations are available online at the MAP Data Centre ([www.map.ethz.ch](http://www.map.ethz.ch)). Also, a special issue of the *Meteorologische Zeitschrift* is in preparation to which some 30 papers have been submitted. As an aside it may be noted that the public evening on Tuesday, designed to present the conference topic to the large public, was appreciated very much by the local population. Finally, the weather assisted the conference excursion to Mt. Eggishorn, almost 3000masl, very graciously, in that it provided window of sunshine just at the right time.

## Ongoing Activities and Future Events

For the second time, the MAP Meeting 2004 will be held joint to the 11th Conference on Mountain Meteorology, 21-25 June 2004, in Mt. Washington Valley, New Hampshire, USA.

- Abstract Deadline: 6 February 2004
- Manuscript Deadline: 14 May 2004
- Preregistration Deadline: 10 May 2004
- Initial Call Published: November 2003

The time table as of today is as follows:

The local organizing committee is looking forward to seeing you in Brig for the first combined ICAM and MAP Meeting in 2003!

### ■ Activities within MAP

| <b>date</b>     | <b>event</b>   |
|-----------------|--|
| May 19-23, 2003 | MAP Meeting 2003 and Int. Conference on Alpine Meteorology (ICAM), Brig, Switzerland ( <a href="http://www.icam2003.ch">http://www.icam2003.ch</a> ) |
| May 23, 2003    | Fifth MSC Meeting in Brig, Switzerland   |
| May 23-24, 2003 | Joint ninth IGP/sixth MAP-NWS Board Meeting in Brig, Switzerland   |

## ■ Future events related to MAP

| <b>date</b>         | <b>event</b>   |
|---------------------|--|
| Nov 18-22, 2002     | 2nd European Conference on Radar Meteorology (ERAD), Delft, The Netherlands ( <a href="http://www.copernicus.org/erad/index2002.html">http://www.copernicus.org/erad/index2002.html</a> )                            |
| Dec 12-13, 2002     | SRNWP workshop on numerical techniques, Toulouse, France ( <a href="http://srnwp.cscs.ch/Lead_Centres/web_LC_NT.html">http://srnwp.cscs.ch/Lead_Centres/web_LC_NT.html</a> )   |
| Apr 2003            | SRNWP workshop on verification, De Bilt, The Netherlands ( <a href="http://srnwp.cscs.ch/Lead_Centres/LC_Workshops_with_reports.html">http://srnwp.cscs.ch/Lead_Centres/LC_Workshops_with_reports.html</a> )         |
| Apr 6-11, 2003      | EGS-AGU-EUG joint assembly, Nice, France ( <a href="http://www.copernicus.org/egsagueug">http://www.copernicus.org/egsagueug</a> )   |
| May 5-7, 2003       | SRNWP workshop on physical adaptation, Vienna, Austria ( <a href="http://srnwp.cscs.ch/Lead_Centres/LC_Workshops_with_reports.html">http://srnwp.cscs.ch/Lead_Centres/LC_Workshops_with_reports.html</a> )           |
| Jun 30-Jul 11, 2003 | IUGG 2003, Sapporo, Japan ( <a href="http://www.jamstec.go.jp/jamstec-e/iugg">http://www.jamstec.go.jp/jamstec-e/iugg</a> )  |
| Oct 27-29, 2003     | Fifth international SRNWP workshop on non-hydrostatic modeling, Bad Orb, Germany ( <a href="http://srnwp.cscs.ch/Lead_Centres/srnwp_2003_leaflet.pdf">http://srnwp.cscs.ch/Lead_Centres/srnwp_2003_leaflet.pdf</a> ) |