

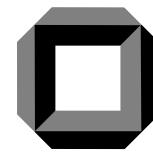
The COPS Operations Center

Christian Barthlott, Ulrich Corsmeier, Christoph Kottmeier

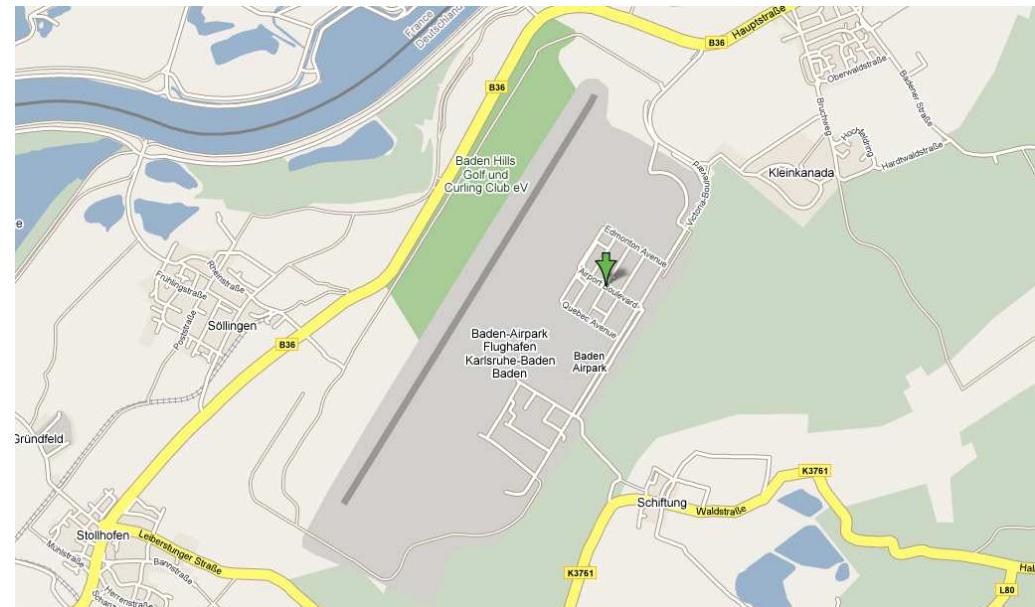
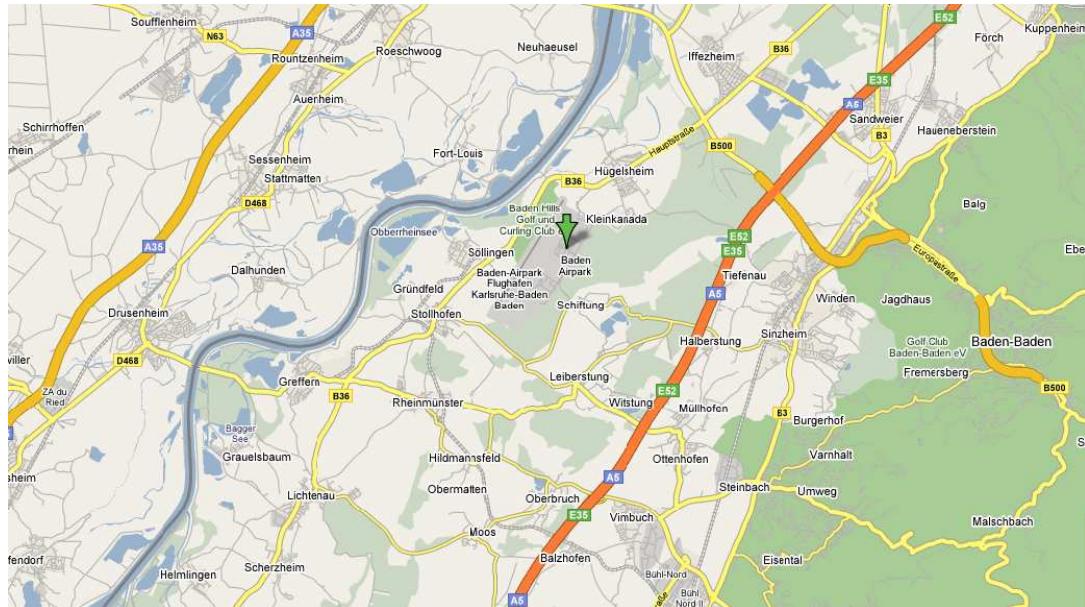
5th COPS Workshop Hohenheim



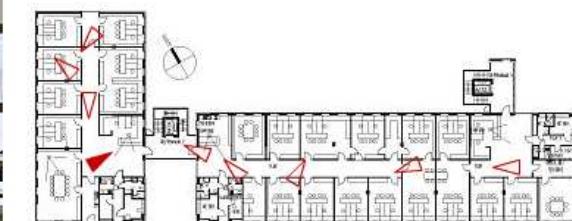
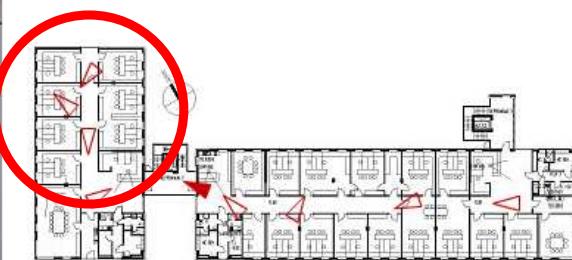
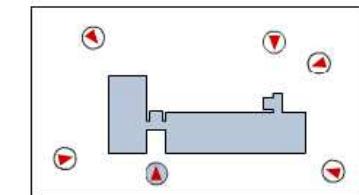
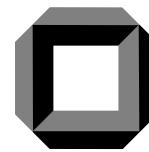
1. Location and Layout
2. Operations Coordination: Suggestion for OC Staff and Mission Planning
3. Status quo of NinJo
4. Operations Center Homepage: www.cops2007.de
5. Accommodation possibilities at Baden-Airpark
6. Open points



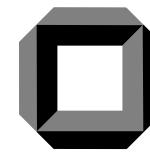
1. Location and Layout



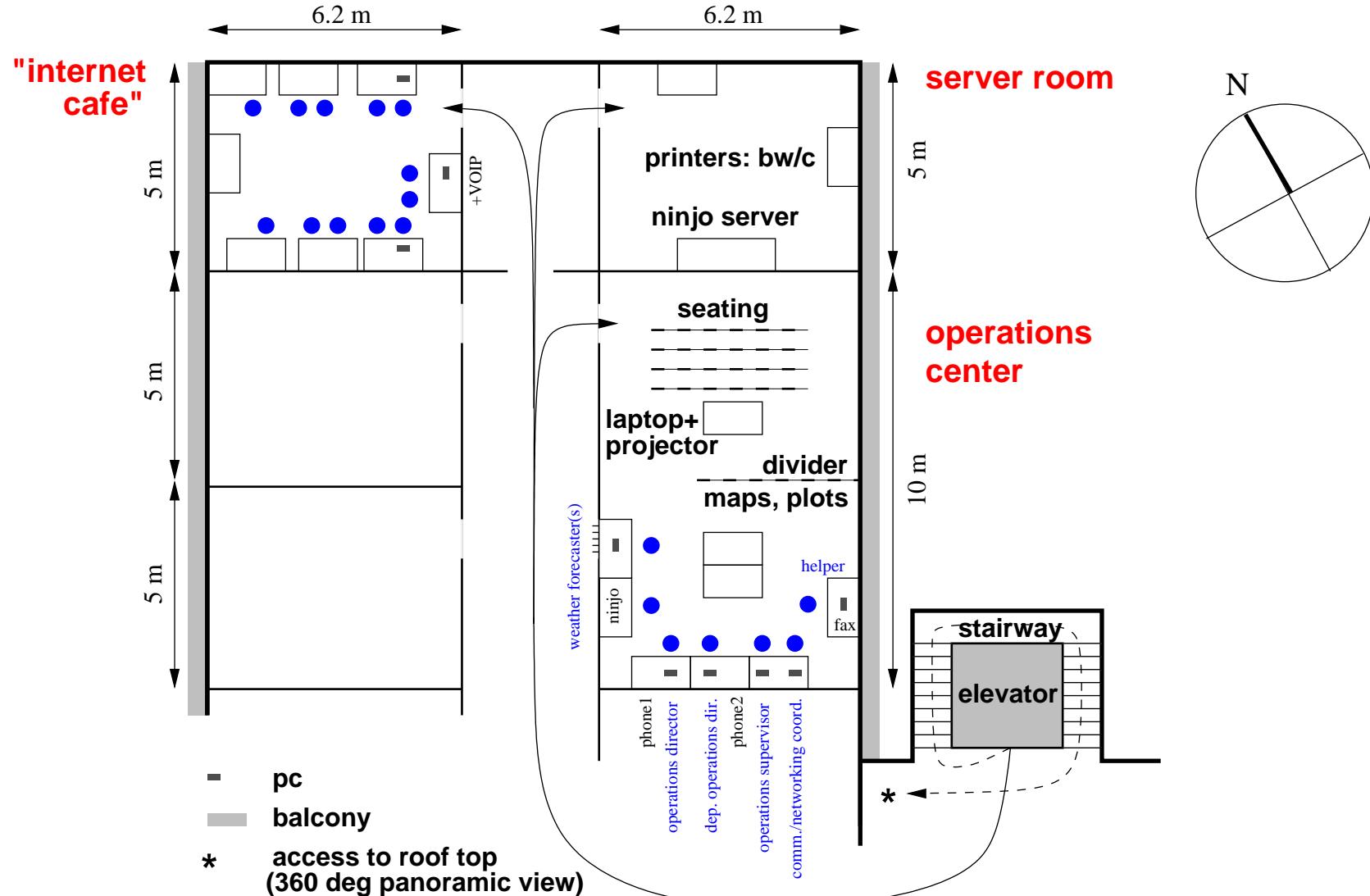
- in Airpark Business Center (ABC) at Baden-Airpark <http://www.badenairpark.de/>
- located near COPS central region, close to aircraft crews, easy access by car and public transport, enough parking space
- outside of the safety area ⇒ for everyone accessible
- 3 rooms have been rented, configuration and installation will start in May

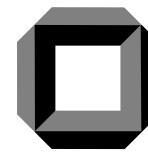


4th floor of western part of ABC, access to rooftop with 360 deg. panoramic view

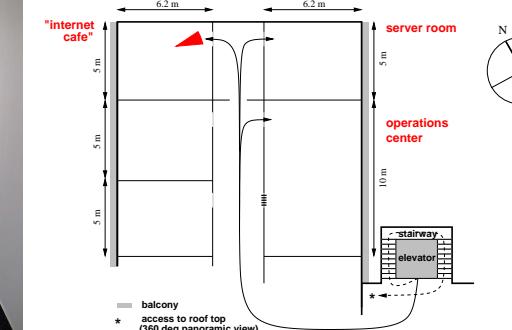
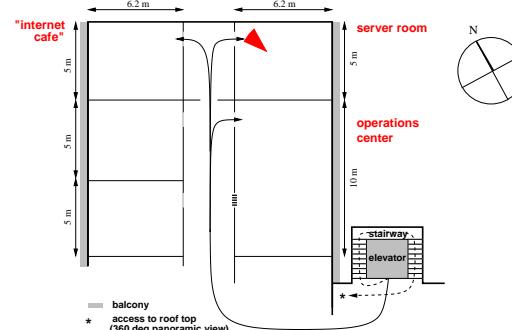
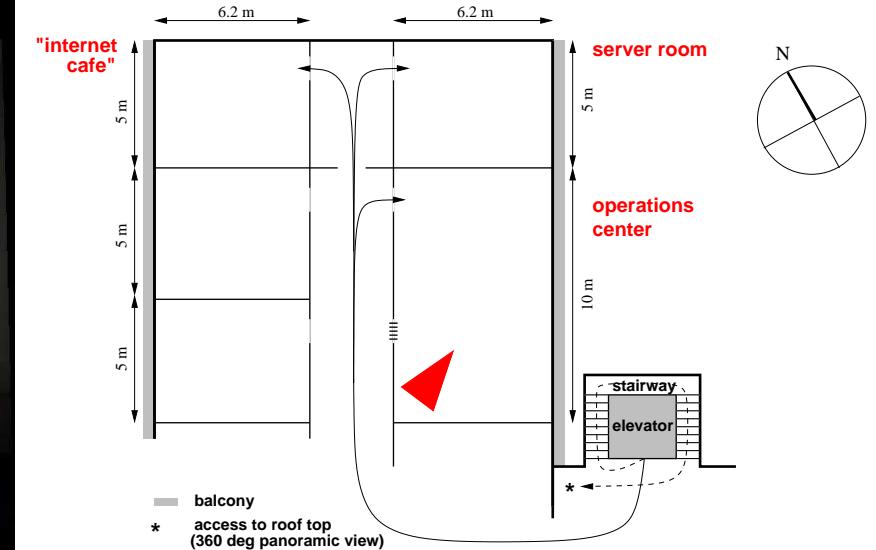


Layout: Division in OC, Server Room and “Internet Cafe”





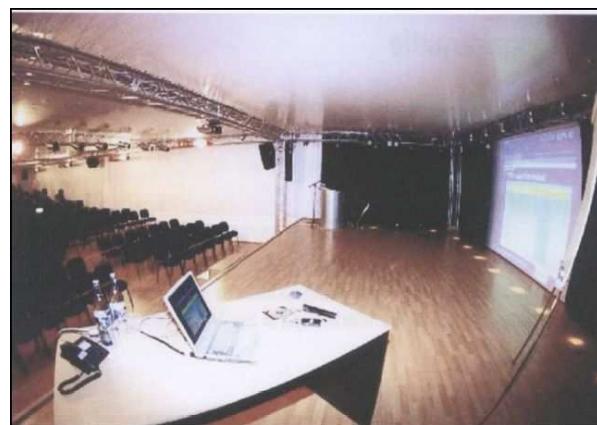
Interior View

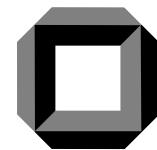


Weekly debriefings in the conference room “Venezia”



- 2 min. away from OC
 - place for up to 200 seatings
 - stage with 70 m²
 - permanently installed video projector and sound system
 - internet connection
 - reserved every Friday





2. Operations Coordination

Proposed composition of Mission Selection Team (MST) and Operations Center Team (OCT):

MST	OCT	Function	Candidates
×		4 WG Representatives	WG Representatives CI, ACM, PPL, DAP
×	×	Operations Director	Members of the ISSC, Wernli, Kalthoff, 2 DLR members, ...
×	×	Deputy Ops. Dir.	II
×	×	Operations Supervisor	Barthlott, Trentmann, Kunz, Kohler
	×	Aircraft Coordinator	COPS Air Crew (Aircraft PI's), 2 DLR members, Finkenzeller/Grillenbeck?
	×	Weather Forecaster 1	Mühr, Groenemeijer, Ehmann, 2 × MeteoFrance, NN
	×	Weather Forecaster 2	II
	×	Communications/Net-working Coordinator	Brückel, Klinck
	×	Helper	Ehmann, Vonderach, Maisenbacher

Operations Director

- Director for scientific mission decisions
- Convenes and co-chairs the COPS Daily Planning Meeting
- Leads daily mission planning discussion
- Decides the final deployment of mobile facilities, ...

Deputy Operations Director

- supports Ops. Dir. with respect to all his responsibilities
- Notifies ground-based sites of special observing schedules and operating instructions

Aircraft Coordinator

- Acts as single point of contact for all COPS Aircraft Facility Managers; Convenes aircraft briefing and debriefing
- Provides updated information to aircraft during flight operations as necessary to ensure successful missions, ...

Operations Supervisor

- Prepares and presents summary status report for Daily Meeting
- Provides daily input on usage and availability of expendable resources
- Coordinates OC space and systems support, ...

Weather Forecaster 1+2

- Provides weather analysis and forecast for the next 3 days
- Presents weather forecast and outlook at daily planning meeting, ...

Communications/Networking Coordinator

- Manages LAN and related computer support, ...
- ⇒ We provided a document with detailed description of the functions and responsibilities which was distributed via email prior to this workshop and can be discussed in the WG tomorrow

Time (LT)	Participants and responsible persons	Task
Day without IOP		
0800-1700	Weather forecasters	Present at OC
until 0900	COPS scientists	Deliver status report from all facilities
1000	MST+OCT	Daily planning meeting
1100	Operations supervisor, helper	Distribute daily briefing package

Case A: no IOP tomorrow

1200	OCT	Disposition, control of weather development
------	-----	---

Case B: IOP tomorrow

1100	Operations directors, aircraft coordinator, flight scientists	Aircraft mission briefing
1200	Aircraft coordinator	Provides notification and alerts to ATC
1200	Dep. Obs. Dir.	Notifies ground-based sites of special observing schedules and operating instructions
1200	OCT	Disposition, control of weather development
1700	Weather forecaster(s)	Forecast update

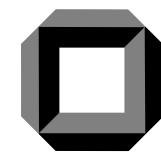
Case C: IOP today

0630	Weather forecasters	Weather analysis and forecast
0700	MST + OCT	Daily planning meeting
0800	Aircraft coordinator	Provides updates to ATC
0800	Operations director, operations supervisor, helper	Distribute daily briefing package
0800	Dep. Obs. Dir.	Notifies ground-based sites of special observing schedules and operating instructions
until 0900	COPS scientists	Deliver status report from all facilities
end of IOP	OCT (+MST)	Observation/modification of scheduled mission

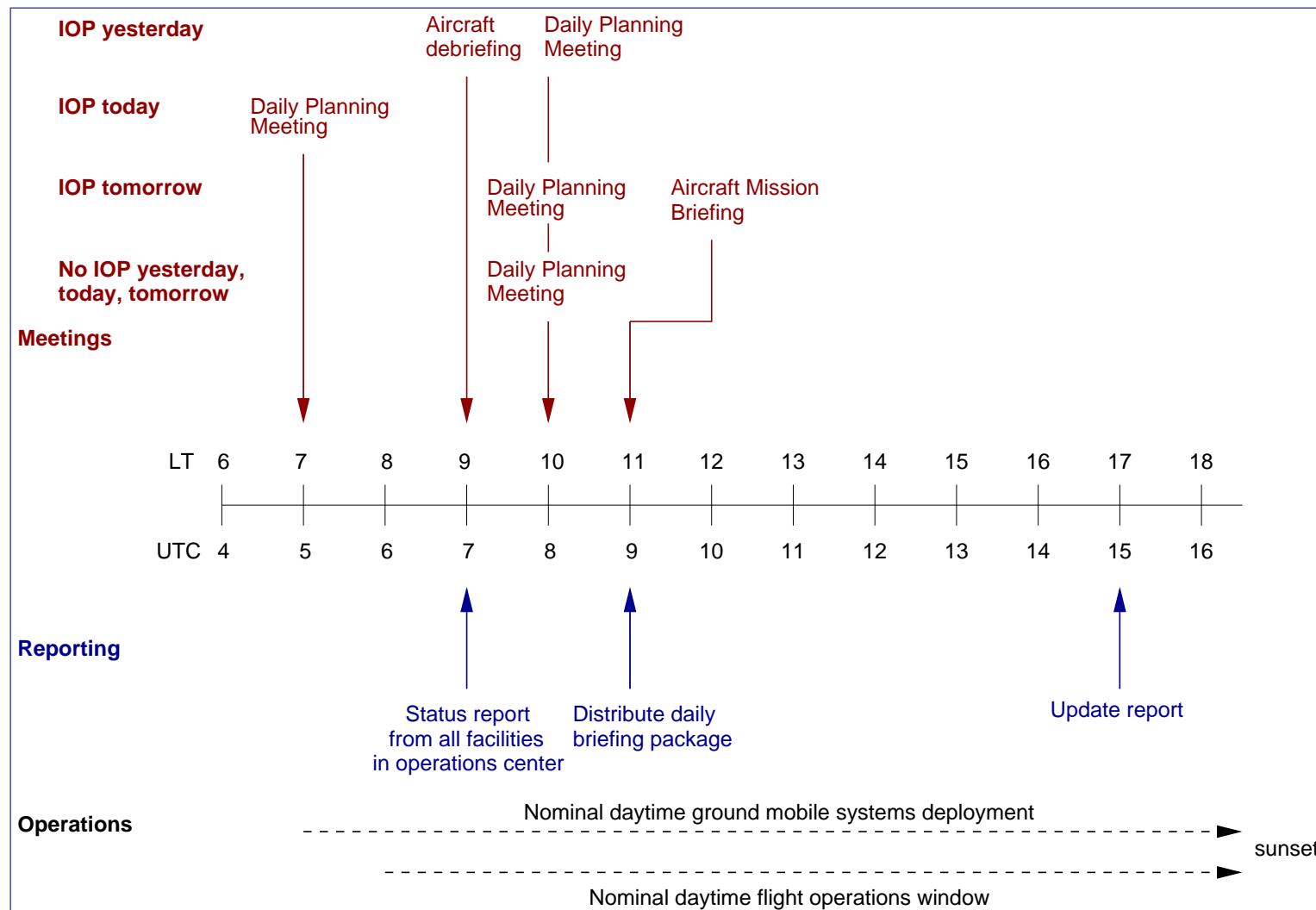
Case D: IOP yesterday

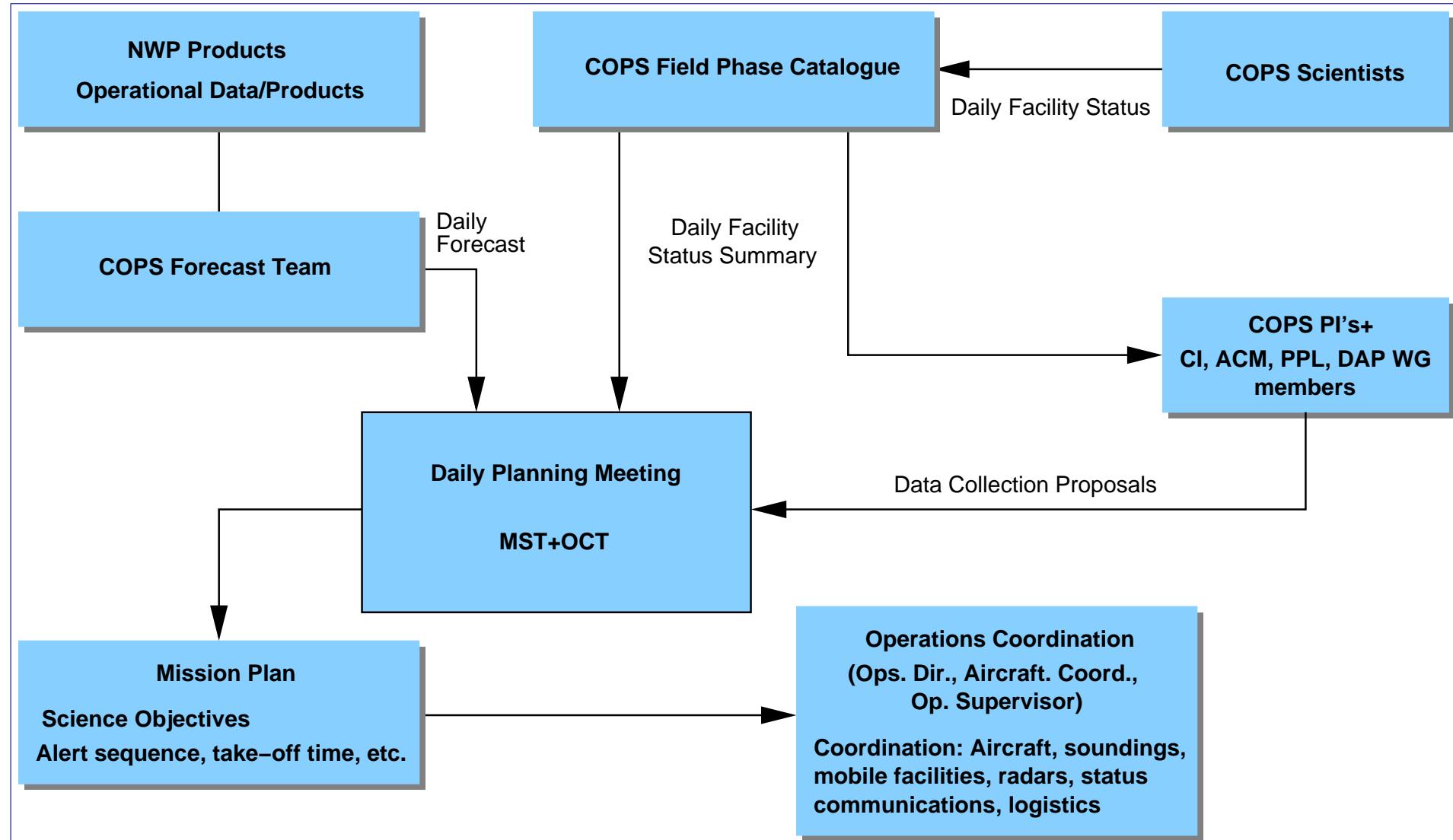
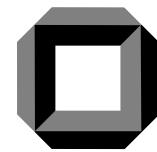
0800-1700	Weather forecasters	Present at OC
0900	Operations director, aircraft coordinator, flight scientists	Aircraft debriefing
until 0900	COPS scientists	Deliver status report from all facilities
1000	MST + OCT	Daily planning meeting
1100	Operations director, operations supervisor, helper	Distribute daily briefing package
1200	OCT	Disposition, control of weather development

“IOP yesterday“ and “IOP tom.“ → “IOP tom.“; “IOP today“ and “IOP tom.“ → “IOP today“



Daily operations and planning schedule. Valid 7 days/week unless down day.

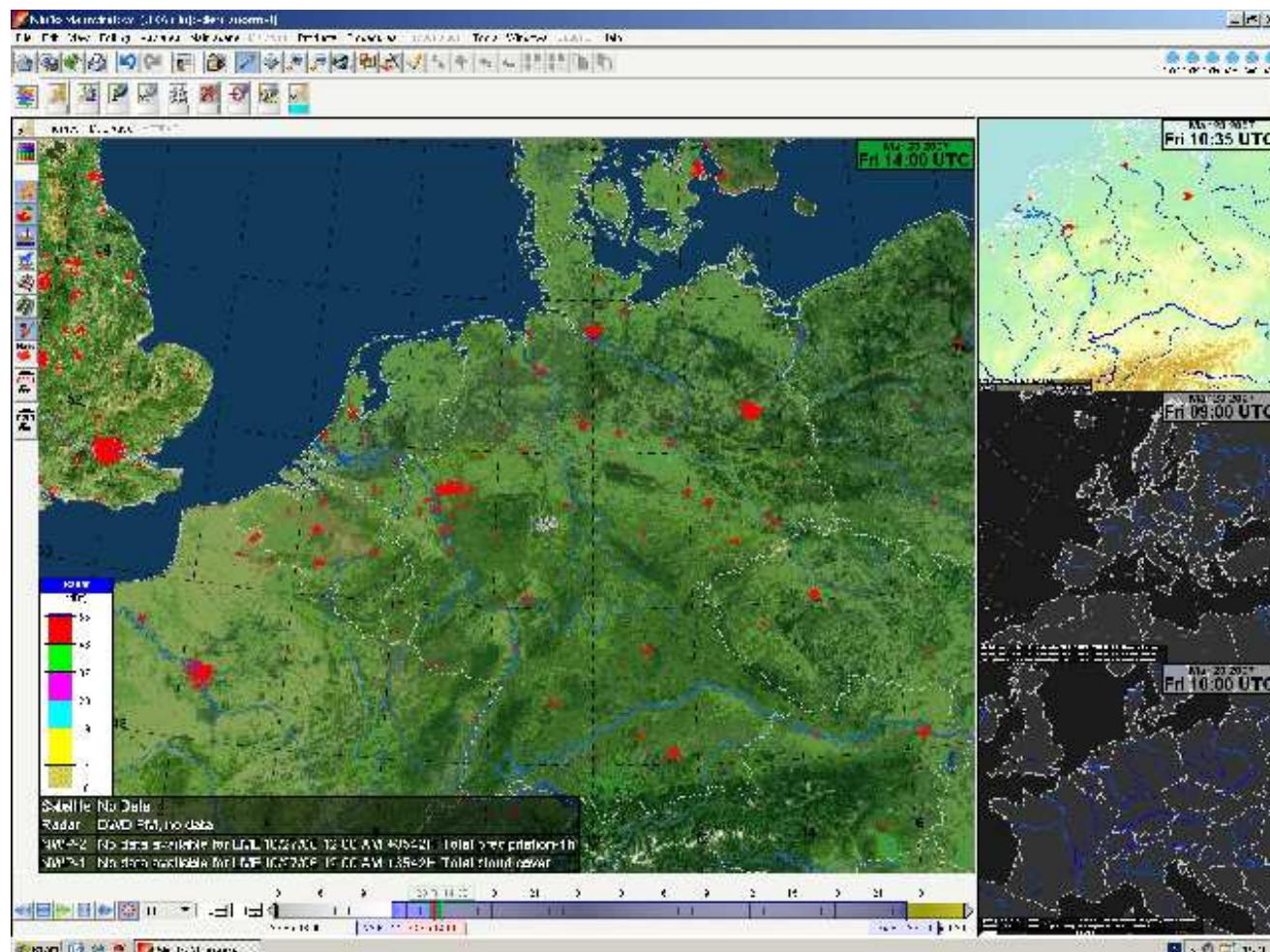




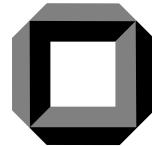
Schematic of suggested COPS interactions and decision sequences

⇒ **WG tomorrow: discuss details, adjustment of OC staff and decision process**

3. Status Quo of NinJo



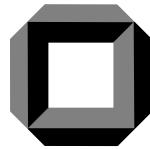
- system has been installed at IMK
 - problems with sorting incoming files into the right directories \Rightarrow up to now, not all available data can be received (synop data is still missing)
 - Model data, Radar data, Satellite data ✓
 - Meteosat 8 high-res. images incl. sat. products ✓ (cloud type, cloud top height, cloud top temperature, total precipitable water, layer prec. water (upper, mid, low), stability analysis imagery)
 - move whole system to OC (sat. dish, server, client) or just install client?



4. Ops. Center Homepage <http://www.cops2007.de/>

➡ skip screenshots

The screenshot shows the COPS Operations Center homepage. The left sidebar contains the COPS logo, study description, location information (Operations Center / Baden-Airpark), date (Do, 22.03.2007, 17:02), and a navigation menu with links like Contact us / Location, About COPS, Daily Reports, Facility Status, Operational Products, Forecast Products, Missions, General Information, Blog, Links, Internal, and Subscribe Mailinglist. The main content area features a large global map of Europe and Africa, with green and yellow colors indicating precipitation levels. Below the map is a news section titled "News:" with the message "Th, 22.03.2007, 15:30: no news.". The bottom right corner of the page has a "Fertig" button.



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Operations Center /
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Do, 22.03. 2007, 17:03

Contact:
Phone Operations Director: 0180...
Mail Operations Center: [copsoc\(at\)gmail.com](mailto:copsoc@gmail.com)

Address:
COPS Operations Center
Airport Boulevard B210
D-77836 Rheinmünster

You can find us using Google Maps

The image is an aerial photograph of the Baden-Airpark area. It shows a large, curved parking lot filled with cars. In the center of the park, there is a cluster of buildings, including the Airpark Business Center and the Conference Room Venezia. A black line highlights the location of the COPS Operations Center, which is located in the 4th floor of the Airpark Business Center. The Conference Room Venezia is also indicated by a box. The surrounding area includes fields, roads, and some forested areas.

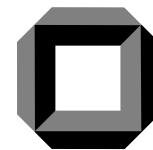
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Baden-Airpark with Airpark Business Center (location of COPS Operations Center) and conference room Venezia.
The Operations Center is located in the 4th floor of the **Airpark Business Center**.
The Debriefings will be held in the **conference room Venezia** in building B206.

⇒ Contact information, address, pictures of OC building



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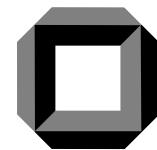
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⇒ Link to OC location with Google Maps



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Convective and Orographically-induced Precipitation Study

Intensive Observation Period of the Priority Program 1167 "Quantitative Precipitation Forecast" of the German Research Foundation (DFG)

A Research and Development Project within the World Weather Research Programme of the World Meteorological Organization (WMO)

Project Summary

The Convective and Orographically-induced Precipitation Study (COPS) is an international field campaign initiated within the German 6-year Priority Program 1167 "Quantitative Precipitation Forecast PQP (Praecipitationis Quantitativa Predictio)". The German Research Foundation (DFG) provides base funding for PQP. Within this program, 11 universities, 3 research centers, and two meteorological services are working together on 23 projects in connection with surface-atmospheric exchange, orographic effects, convection, cloud microphysics, data assimilation, and parameterization. For the field experiment, a region in southwestern Germany/eastern France has been selected, where, on the one hand, severe thunderstorm activity is frequent in summer with significant amounts of precipitation and risk of flash flood events. On the other hand, the skill of numerical weather forecasts in this region is particularly low.

The objective of COPS is to identify the physical and chemical processes responsible for the deficiencies in QPF over low-mountain regions with the goal to improve their model representation. Correspondingly, the overarching goal of COPS is to

Advance the quality of forecasts of orographically-induced convective precipitation by 4D observations and modeling of its life cycle.

Through strong collaboration between modelers, instrument PIs, weather forecast centers, and hydrologists a list of fundamental hypotheses has been developed, which will be addressed by combining three fundamental components of COPS:

- 1) Synergy of unique in-situ and remote sensing instruments with unique measurement properties on different platforms.
- 2) Advanced high-resolution models optimized for operation in complex terrain.
- 3) Data assimilation and ensemble prediction systems.

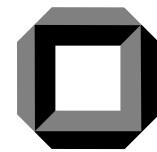
Intense links to international research programs such as THORPEX and MAP-FDP/D-PHASE have already been established, as these are considered essential to reach the science goals. The first link ensures the improvement of the modeling of the large-scale conditions in the COPS region and studies of the interaction of small-scale and large-scale processes. The latter provides operational deterministic and probabilistic forecasts for the COPS region for mission planning but also for a validation of these forecasts with previously unachieved details.

The strong collaboration between instrument PIs and the modeling community will ensure a long-term, significant improvement of operational QPF. COPS also contains a strong educational component, which ensures that students from schools and universities will get hands-on experience in the performance of measurements during an international field campaign. It is expected that these activities will improve the competence of students in weather and climate education at schools and universities.

If the science goal of COPS is accomplished, advanced process understanding will lead to improved QPF in a critical region where skillful prediction of rain is especially important for economy and society. We expect that the results can also be applied in other regions of interest all over the world.

COPS is supported by an initiative of German Helmholtz Centers within the framework of the "Transport and Chemical Conversion in Convective Systems" project

⇒ **Information about COPS and TRACKS, Project office, and Links to related projects**



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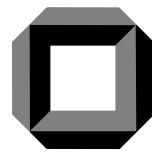


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Daily Reports

Date(UTC)	facilities status summary	ops plan of the day	science director summary	weather nowcast	weather summary

⇒ Table will grow every day during the field campaign



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May	June	July	August
01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

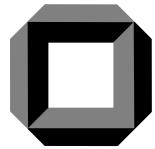
May

Legend: no report, down, provisional, up

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	

DROPSonde_TEAM_1
DROPSonde_TEAM_2
DROPSonde_TEAM_3
DROPSonde_TEAM_4
DROPSonde_TEAM_5
DO_128_1 (green)
DO_128_2 (red)
MOBILE_RASO_1
WTR
WINDTRACER
E_BILANZ_1 (orange)
E_BILANZ_2 (green)
MOBILE_RADAR
KARLSRUHE_RADAR
SISOMOP_ST01
SISOMOP_ST02
SISOMOP_ST03
SISOMOP_ST04
SISOMOP_ST05
SISOMOP_ST06

⇒ Facility status summary for every month, colours define actual status (up, down, provisional, no report), click on specific day...



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- DROPSONDE_TEAM_2
- DROPSONDE_TEAM_3
- DROPSONDE_TEAM_4
- DROPSONDE_TEAM_5

Radar Facilities:

- DO_128_1
- DO_128_2
- MOBILE_RASO_1
- WTR
- WINDTRACER
- E_BILANZ_1
- E_BILANZ_2
- MOBILE_RADAR
- KARLSRUHE_RADAR

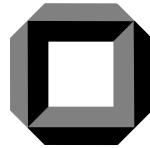
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- SISOMOP_ST01
- SISOMOP_ST02
- SISOMOP_ST03
- SISOMOP_ST04
- SISOMOP_ST05
- SISOMOP_ST06
- SISOMOP_ST07
- SISOMOP_ST08
- SISOMOP_ST09

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...to get the summary of this day \Rightarrow all PI's will get a user-id and a password to deliver the status report of their instruments (actual list is incorrect and still under construction)



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May, 11 [edit](#)

Legend: ■ no report, ■ down, ■ provisional, ■ up

Dropsonde Facilities:

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- DROPSONDE_TEAM_2
- DROPSONDE_TEAM_3
- DROPSONDE_TEAM_4
- DROPSONDE_TEAM_5

Radar Facilities:

- DO_128_1
- DO_128_2
- MOBILE_RASO_1
- WTR
- WINDTRACER
- E_BILANZ_1
- E_BILANZ_2
- MOBILE_RADAR
- KARLSRUHE_RADAR

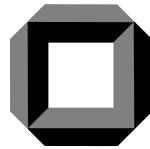
sisomop Facilities:

- SISOMOP_ST01
- SISOMOP_ST02
- SISOMOP_ST03
- SISOMOP_ST04
- SISOMOP_ST05
- SISOMOP_ST06
- SISOMOP_ST07
- SISOMOP_ST08
- SISOMOP_ST09

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⇒ after login, click on your instrument (marked blue); only right to edit your own instrument



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edit datasets

DO_128_1

Status: no report

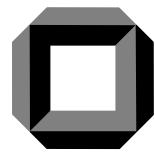
Comment:

save

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⇒ choose the status from a drop-down menu (up, down, provisional) and enter your comments; Facility status will be updated immediately, re-edit is possible



Google Mail - Posteingang COPS - Convective and Orograph...

COPS

Convective and
Orographically-induced
Precipitation Study

Operations Center /
Baden-Airpark

Do, 22.03. 2007, 17:07

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Facility Status

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(C) Institut für Meteorologie und
Klimaforschung, Universität Karlsruhe
/ Forschungszentrum Karlsruhe

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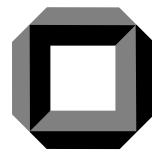
[Impressum](#) 

[webmaster](#)

Missions

IOP	Begin Date/Time	End Date/Time	Scenario	Daily Reports	Notes
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⇒ Information about all IOP's will be summarized here



COPS

Convective and Orographically-induced
Precipitation Study

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- [Uncategorized \(3\)](#)

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Search

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March 2007

M	T	W	T	F	S	S
1	2	3	4			
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

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Operations Center Blog

Erneuter Test wg RSS
by admin @ 2:58 pm. Filed under Uncategorized
Test

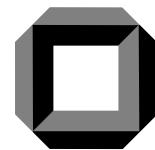
[\[Comments \(1\)\]](#) [\[link\]](#)

RSS testen
by admin @ 5:28 pm. Filed under Uncategorized
Um immer die neuesten Nachrichten von COPS Blog an einem Firefox-Browser angezeigt zu bekommen:
RSS Feed abonnieren:
Einfach auf RSS 2.0 klicken und als Bookmark ablegen

[\[Comments \(0\)\]](#) [\[link\]](#)

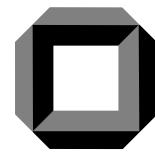
COPS Blog zum Testen freigegeben
by admin @ 10:20 am. Filed under Uncategorized
Der COPS Blog ist seit heute, 20.3.07 zum Testen freigegeben. Bei Schwierigkeiten bitte ich um eine Mitteilung an: webmaster(at)imk.uka.de

⇒ Forum provides exchange possibilities between COPS scientists:
upload of text and pictures; archive for every day



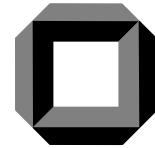
The screenshot shows a web page for the Convective and Orographically-induced Precipitation Study (COPS). The header includes the COPS logo, the study's name, the location (Operations Center / Baden-Airpark), and the date (Do, 22.03. 2007, 17:08). A sidebar on the left lists various links: Contact us / Location, About COPS, Daily Reports, Facility Status, Operational Products, Forecast Products, Missions, General Information, Blog, Links, Internal, and Subscribe Mailinglist (which is highlighted in orange). Below this is a copyright notice for the Institut für Meteorologie und Klimaforschung, Universität Karlsruhe / Forschungszentrum Karlsruhe. At the bottom of the sidebar is the KIT logo and links for Impressum and webmaster. The main content area contains a yellow box with the text "Enter your E-Mail Address to subscribe the COPS-Mailinglist" and a text input field. An "OK" button is located at the bottom right of the box. The URL http://www.cops2007.de/html/subscribe_mailinglist.html is visible at the bottom of the page.

⇒ daily briefing package and other information will also be distributed via email,
please subscribe to this list by entering your email address here



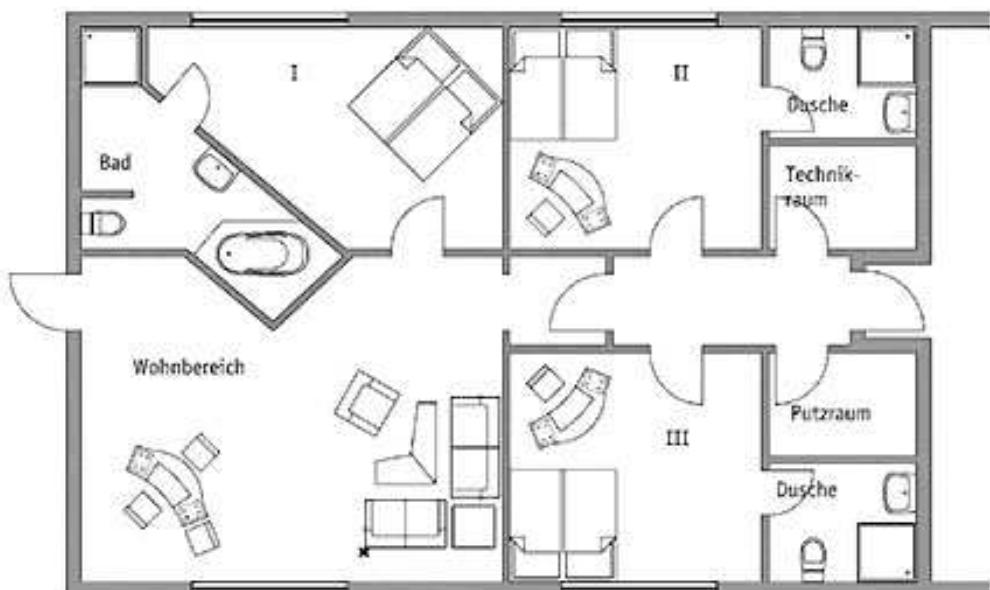
The screenshot shows a web browser window with two tabs: "Google Mail - Posteingang" and "COPS - Convective and Orographically-induced Precipitation Study". The main content area is titled "Mailinglisten Universitaet Karlsruhe" and shows the "cops@lists.uni-karlsruhe.de" mailing list. It displays a message asking for a password confirmation. A large blue arrow points to the "password" input field with the text "↑ enter pw here". Other visible elements include a sidebar for the COPS website, a footer with KIT and IMK links, and a language selection dropdown.

⇒ a password will be sent to you immediately; please confirm your subscription by entering the password (Preferences: change pw, change or add email address)



5. Accommodation possibilities at Baden-Airpark

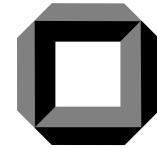
- 3 double rooms in the building of the conference room B206
- modern and comfortable furniture with double bedrooms, TV, and shower or bath tub
- please contact Sybille Klug for booking or further information: +49 (0)7229 662 111
Sybille.Klug@baden-airpark.de



- approx. 10 single rooms in building B112
- TV/Sat, showers on each floor and partly a common kitchen (for long-term residence)
- Inquiries/bookings can be carried out by calling +491727245059 (Mr Breuer) **book early!**
- Prices including VAT: 1 day 35; 1 week 120; 14 days 200; 1 month 350 Euro



A selection of hotels in the surrounding of Baden-Airpark: Search with Google Maps



6. Open points

- Operational Products

- what measurement systems are capable of regularly transmitting quicklooks to the OC? e.g. radiosonde data and quicklooks would be very helpful for mission planning ⇒ please contact me during the workshop

- D-PHASE Products

- reduce the number of plots to 10000 - 15000 per day (storage capacity!)
 - IMK will provide an ftp-server, where all participating model groups can upload their quicklooks ⇒ we need to know at what time of day the files will be sent for preparation of the visualisation area

- Operations Coordination

- further adjustment of OC staff and decision process? ⇒ WG tomorrow

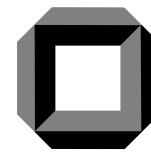


Photo: B. Mühr (2000) www.wolkenatlas.de

Thank you

**...please don't forget to visit <http://www.cops2007.de> for
registering to the COPS mailing list!**