

Operations Plan of the Day

Sunday, 29 July 2007, 1100 UTC

General Remarks:

In the strong westerly flow aloft, an embedded surface frontal wave moves eastward over Germany on **Sunday**. During afternoon hours large amounts of low/mid-level mainly stratiform clouds prevail, some stratiform rain is expected in places. While the cold front approaches, rain becomes of partly convective nature, although a thunderstorm seems not to be very likely. The cold front itself is expected to cross the COPS area at 16-18 UTC. While crossing a mid/upper-level short wave trough might give additional forcing enhancing precipitation activity. The passage could be quite pronounced with heavy rain, possible thunderstorms and storm force gusts.

In the wake of the frontal wave a strong northwesterly flow pushes cold air of polar origin into central Europe. Although being under the influence of a long-wave trough, forcing for vertical motion is expected to be relatively weak in the COPS area on **Monday**. Remnants of low level clouds (Sc) might be present at first. In the course of the day widespread cumulus clouds of Cu hum and Cu med type should occur, a single shower may develop.

An upper-level short wave trough is expected to cross the COPS area in the night to **Tuesday**, generating mostly stratiform clouds, a few showers cannot be excluded. The stratiform cloudiness will be transformed into more convective (Cu) in the course of the day. As a slowly eastward moving high pressure ridge builds up over France, mid-level subsidence in the southwestern parts of Germany becomes evident. If the subsidence leads to a pronounced inversion, cumulus clouds may partly spread again into Stratocumulus. There is only a marginal risk for weak showers.

On **Wednesday**, the ridge is expected over Germany. Strong mid-level subsidence creates fair, dry and warmer conditions in the COPS area.

Ahead of an approaching long-wave trough, the southwesterly flow increases on **Thursday**, advecting warmer and moister air into the COPS area. The remnants of a Mesoscale Convective System that may form over central France in the night before, could affect the COPS area in the morning hours already, leading to partly stratiform, partly convective cloudiness and some rain throughout the day. However, this scenario still is quite uncertain.

Operations summary:

- # Day X (Sunday):** no IOP (but some dedicated operations to monitor the orographically modified rain during a front passage)
- # Day X+1 (Monday):** IOP
- # Day X+2 (Tuesday):** IOP possible
- # Day X+3 (Wednesday):** IOP possible
- # Day X+4 (Thursday):** IOP possible

Mission Plans:

Day X, Sunday, July 29: no IOP (but dedicated missions)

In the strong westerly flow aloft, an embedded surface frontal wave moves eastward over Germany on **Sunday**. During afternoon hours large amounts of low/mid-level mainly stratiform clouds prevail, some stratiform rain is expected in places. While the cold front approaches, rain becomes of partly convective nature, although a thunderstorm seems not to be very likely. The cold front itself is expected to cross the COPS area at 16-18 UTC. While crossing a mid/upper-level short wave trough might give additional forcing enhancing precipitation activity. The passage could be quite pronounced with heavy rain, possible thunderstorms and storm force gusts.

Specifications of vertical soundings

- # EUCOS-MeteoSwiss: 05, 17 UTC (Payerne; launching time)
- # EUCOS-DWD: 05, 17 UTC (Meiningen, M, S; launching time)
- # Meistratzheim (V): 2315 (day X-1), 0515, 0815, 1115, 1415, 1715 UTC)

Doppler-on-Wheels (DOW):

- # Coordinated operations of two DOWs in the Northern Black Forest (DNW5 (Neuried) and DNE8), coordinated with POLDIRAD

Aircraft:

No aircraft missions planned

Day X+1, Monday, July 30: IOP planned

In the wake of the frontal wave a strong northwesterly flow pushes cold air of polar origin into central Europe. Although being under the influence of a long-wave trough, forcing for vertical motion is expected to be relatively weak in the COPS area on **Monday**. Remnants of low level clouds (Sc) might be present at first. In the course of the day widespread cumulus clouds of Cu hum and Cu med type should occur, a single shower may develop.

Specifications of vertical soundings:

- # IMK-FZK: 08, 11, 14, 17, 20 UTC
- # IMK-Burnhaupt: no soundings
- # EUCOS-MeteoSwiss: 05, 17 UTC (Payerne; launching time)
- # EUCOS-DWD: 05, 17 UTC (Meiningen, M, S; launching time)
- # Hornisgrinde (H): no soundings
- # Achern (R): 08, 11, 14, 17 UTC (**RS 80 H**)
- # Meistratzheim (V): 2315 (day X-1), 0515, 0815, 1115, 1415, 1715 UTC
- # Deckenpfronn (S): no soundings
- # IMK Dropusondes: no operations

Lidar systems:

Operation period 0800 – 1800 UTC; Scan scenario ScaS1.

Doppler-on-Wheels (DOW):

Coordinated operations of two DOWs in the Northern Black Forest (DNW5 (Neuried) and DNE8)

Sodar at Supersite R:

No operation allowed.

Aircraft:

SAFIRE Falcon 1000 – 1600 UTC MAP pattern

DLR Falcon 1000 – 1600 UTC MAP pattern

Do 128 1300 – 1700 UTC FLUX pattern and Chaff release

Day X+2, Tuesday, July 31: IOP possible

An upper-level short wave trough is expected to cross the COPS area in the night to **Tuesday**, generating mostly stratiform clouds, a few showers cannot be excluded. The stratiform cloudiness will be transformed into more convective (Cu) in the course of the day. As a slowly eastward moving high pressure ridge builds up over France, mid-level subsidence in the southwestern parts of Germany becomes evident. If the subsidence leads to a pronounced inversion, cumulus clouds may partly spread again into Stratocumulus. There is only a marginal risk for weak showers.

Aircraft:

SAFIRE Falcon 1900 – 2200 UTC reduced MAP pattern for Lidar intercomparison possible

Any supporting measurements from ground-based systems will be coordinated by Paolo Di Girolamo

If no IOP is performed, the 6th Science Debriefing shall take place at the conference room Venezia in the afternoon. To be confirmed on Monday morning.

Day X+3, Wednesday, August 01: IOP possible

On **Wednesday**, the ridge is expected over Germany. Strong mid-level subsidence creates fair, dry and warmer conditions in the COPS area.

Intercomparisons of ground-based and airborne systems are planned to measure vertical fluxes.

Day X+4, Thursday, August 02: IOP possible

Ahead of an approaching long-wave trough, the southwesterly flow increases on **Thursday**, advecting warmer and moister air into the COPS area. The remnants of a Mesoscale Convective System that may form over central France in the night before, could affect the COPS area in the morning hours already, leading to partly stratiform, partly convective cloudiness and some rain throughout the day. However, this scenario still is quite uncertain.

Your COPS Operations Center Team

Susanne Crewell
Science Director

Jörg Trentmann
Operations Director