

# Operations Plan of the Day

**Saturday, 28 July 2007, 1100 UTC**

## General Remarks:

In the strong westerly flow aloft, an embedded surface frontal wave currently moves eastward over Germany and is expected near the Polish border on **Saturday** afternoon. Low/mid level mostly stratiform clouds prevail throughout the day, becoming more convective with the approach of the cold front in the afternoon. There might be some gaps in the cloud cover, preferably in the lee of the Vosges mountains and the Black Forest. A few rain drops are possible around noon, followed by scattered showers during the afternoon. As slightly unstable air is present, a thunderstorm or two can not be excluded to form over central Germany but is unlikely in the COPS area.

A second and stronger frontal wave will be initiated west of Ireland on Saturday. Quickly travelling eastwards, it will pass over central Germany on **Sunday**. Combining guidance from different models the track is still somewhat uncertain – the uncertainty amounts to 100 to 200 km in the north-south direction. Remnants of the frontal zone, that passed the COPS area in the previous night, are likely to be present in the early morning hours associated with stratiform clouds as well as with a few embedded shower, especially in the southern parts. The cloudiness should temporarily decrease before noon allowing some insolation. The southwesterly flow of an unstable air mass increases; however, only small amounts of CAPE will develop. Starting from around noon, mostly embedded towering cumulus clouds appear, a shower or even a thunderstorm cannot be excluded. The cold front is expected to cross the COPS area around 18 UTC, its passage being quite pronounced with heavy rain, a possible thunderstorm 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 weak in the COPS area on **Monday**. Therefore fair conditions are to be expected. However, widespread cumulus clouds of Cu hum and Cu med type should occur, a few showers may develop.

An upper-level short wave trough could cross the COPS area in the night to **Tuesday**, generating clouds and weak showers. 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 into Stratocumulus in the afternoon hours. Apart from the morning hours, showers are not to be expected in the course of the day.

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

## Operations summary:

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

## Mission Plans:

### Day X, Saturday, July 28: no IOP

In the strong westerly flow aloft, an embedded surface frontal wave currently moves eastward over Germany and is expected near the Polish border on **Saturday** afternoon. Low/mid level mostly stratiform clouds prevail throughout the day, becoming more convective with the approach of the cold front in the afternoon. There might be some gaps in the cloud cover, preferably in the lee of the Vosges mountains and the Black Forest. A few rain drops are possible around noon, followed by scattered showers during the afternoon. As slightly unstable air is present, a thunderstorm or two can not be excluded to form over central Germany but is unlikely in the COPS area.

#### Aircraft:

# SAFIRE ATR42 EUFAR flight scheduled for 0900 -1230 UTC.

Supporting measurements from ground-based systems are coordinated by Yann Dufournet.

### Day X+1 Sunday, July 29: no IOP (but dedicated missions)

A second and stronger frontal wave will be initiated west of Ireland on Saturday. Quickly travelling eastwards, it will pass over northern Germany on **Sunday**. Further to the south, the COPS area gets into an increasing southwesterly flow of quite unstable moist and warm air. As insolation is expected at least during the first half of the day, some amounts of CAPE are likely to develop. Starting from around noon, towering cumulus clouds appear eventually growing into showers and thunderstorms and being isolated at first, mainly over the mountains. With the approach of the cold front and an enhancing upper-level short wave trough showers/thunderstorms become more widespread and of embedded character, they might be weakly organized in a line. Possible storm-force gusts are associated with the passing frontal zone.

#### 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+2, Monday, July 30: no IOP

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, forcings should be weak in the COPS area on **Monday**. Therefore fair conditions are to be expected. However, widespread cumulus clouds of Cu hum and Cu med type should occur, a few showers are most likely in the morning hours.

#### 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

### Day X+3, Tuesday, July 31: IOP possible

After a very chilly night, a slowly eastward moving high pressure ridge builds up over France on **Tuesday**, leading to mid-level subsidence in the southwestern parts of Germany. Shallow cumulus clouds are likely to develop in the course of the day. If the subsidence leads to a pronounced inversion already, Cumulus might partly spread into Stratocumulus in the afternoon hours. Showers are not to be expected.

If no IOP is performed, the 6<sup>th</sup> Science Debriefing shall take place at the conference room Venezia in the afternoon.

### Day X+4, 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.

#### Your COPS Operations Center Team

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