

# Operations Plan of the Day

**Thursday, 26 July 2007, 0900 UTC**

## General Remarks:

On Thursday, a long wave trough approaches from the west and pushed the high pressure ridge to the east. An increasing southwesterly flow establishes in the course of the day. However, large scale forcing still remains weak in southern Germany, the day is supposed to stay fair and dry apart from some cumulus clouds (Cu hum to Cu con) mainly over the mountains. Cirrus clouds may enter the COPS area in the evening/night. Surface winds freshen during the day but are not of significant strength, the winds aloft become stronger towards the evening from the southwest. As some CAPE will be available at the end of the day and with the help of a weak crossing vorticity maximum, showers and thunderstorms cannot be excluded over the mountains, though they are not very likely; chances are best in the very south of the Black Forest.

During the second half of the night, a weak frontal zone with mainly mid-level stratiform clouds and very few showers possible will cross the COPS area. A second frontal zone is likely to arrive in the morning hours of Friday. A few raindrops may fall out of mostly low-level stratiform clouds. As the frontal zone becomes more or less stationary over the COPS area, the second half of the day will be dominated by clouds, too. No rain is expected, chances for sun are best in the late afternoon/evening. A mean westerly wind of 25-30 kt is expected above 1000 m.

In the strong westerly flow aloft, an embedded upper-level short wave trough generates a frontal wave just off Cornwall on Friday evening. Travelling quickly eastwards, it is expected to cross central/northern Germany in the morning hours of Saturday. According to GFS and ECMWF models, it should affect the COPS area in the first half of the day with large amounts of clouds at all levels and some mainly stratiform rain. During the afternoon hours, still many clouds of mainly convective nature will be present but with sunny intervals in between. Widespread showers of partly embedded character are likely to occur, thunderstorms are not expected.

On Sunday, another frontal wave is likely to pass over the COPS area with larger amounts of stratiform rain (GFS and GME models); ECMWF and NOGAPS models suggest a more northerly track and therefore much drier conditions in southern Germany. In any case, the day should be cloudy but dry at first, followed by partly stratiform, partly convective rain. As unstable air may be advected from the SW, thunderstorms cannot be excluded.

From Monday onwards the pressure pattern over Europe still is very uncertain. Whereas the main run of GFS, 00 UTC, suggests a trough with very cold polar air to be present over central Europe, most ensemble members and other global models tend to a warmer version. A persistent westerly flow with relatively cool air masses and unstable weather conditions appears to be the most likely scenario.

## Operations summary:

- # Day X (Thursday): IOP 11 b**
- # Day X+1 (Friday): no IOP**
- # Day X+2 (Saturday): no IOP**
- # Day X+3 (Sunday): IOP possible**
- # Day X+4 (Monday): IOP possible**

## Mission Plans:

### Day X, Thursday, July 26: IOP 11b

On Thursday, a long wave trough approaches from the west and pushed the high pressure ridge to the east. An increasing southwesterly flow establishes in the course of the day. However, large scale forcing still remains weak in southern Germany, the day is supposed to stay fair and dry apart from some cumulus clouds (Cu hum to Cu con) mainly over the mountains. Cirrus clouds may enter the COPS area in the evening/night. Surface winds freshen during the day but are not of significant strength, the winds aloft become stronger towards the evening from the southwest. As some CAPE will be available at the end of the day and with the help of a weak crossing vorticity maximum, showers and thunderstorms cannot be excluded over the mountains, though they are not very likely; chances are best in the very south of the Black Forest.

#### Specifications of vertical soundings:

# IMK-FZK:	05, 08, 11, 14, 17, 20 UTC
# IMK-Burnhaupt:	05, 08, 11, 14, 17, 20 UTC
# EUCOS-MeteoSwiss:	05, 17 UTC (Payerne; launching time)
# EUCOS-DWD:	05, 17 UTC (Meiningen, M, S; launching time)
# Hornisgrinde (H):	05, 08, 11, 14, 17, 20 UTC (RS 92 when available, to be replaced by RS 80 HG)
# Achern (R):	05, 08, 11, 14, 17, 20 UTC (RS 92 when available, to be replaced by RS 80 HG)
# Meistratzheim (V):	2315 (day X-1), 0515, 0815, 1115, 1415, 1715 UTC
# Deckenpfronn (S):	2 soundings: morning (one time of 05, 08* or 11 UTC) and afternoon (one time of 14, 17*, 20 UTC)
	<b>*Operations Center recommendation</b>
# IMK Dropupsondes:	no operations for drop-up teams
# Freiburg, Tethersonde	hourly soundings continued from Wednesday until 20 UTC in St. Georgen, Freiburg

#### Lidar systems:

# Operation period 0500 – 2000 UTC; Scan scenario ScaS3

#### Doppler-on-Wheels (DOW):

# Operation of DOW in the Northern Black Forest (Neuried), coordinated with  
POLDIRAD

#### Sodar at Supersite R:

# Operation continued until 0500 UTC.

### **Aircraft:**

Mission scenario “High-Pressure Convection” with overpasses of Supersites.

# SAFIRE Falcon 0800 – 1200 UTC MAP pattern, droppings in Area A and B

# DLR Falcon 0845 – 1245 UTC FLUX pattern

# Do 128 0900 – 1200 UTC FLUX pattern

# FAAM BAe146 1050 – 1520 UTC Rhine valley, Area A and B

These four missions are coordinated.

# Zeppelin 0400 – 0800 UTC TRACKS Bienwald

0900 UTC transfer flight to Friedrichshafen

# Do 128 1400 – 1700 UTC, dropping in Area A and B

# Dimona afternoon flight, EUFAR mission

# Ultralight 0500 - 0700 UTC TRACKS mission

# SAFIRE ATR42 no flight

### **Day X+1, Friday, July 27: no IOP**

During the second half of the night, a weak frontal zone with mainly mid-level stratiform clouds and very few showers possible will cross the COPS area. A second frontal zone is likely to arrive in the morning hours of Friday. A few raindrops may fall out of mostly low-level stratiform clouds. As the frontal zone becomes more or less stationary over the COPS area, the second half of the day will be dominated by clouds, too. No rain is expected, chances for sun are best in the late afternoon/evening. A mean westerly wind of 25-30 kt is expected above 1000 m.

### **Day X+2, Saturday, July 28: no IOP**

In the strong westerly flow aloft, an embedded upper-level short wave trough generates a frontal wave just off Cornwall on Friday evening. Travelling quickly eastwards, it is expected to cross central/northern Germany in the morning hours of Saturday. According to GFS and ECMWF models, it should affect the COPS area in the first half of the day with large amounts of clouds at all levels and some mainly stratiform rain. During the afternoon hours, still many clouds of mainly convective nature will be present but with sunny intervals in between. Widespread showers of partly embedded character are likely to occur, thunderstorms are not expected.

### **Day X+3, Sunday, July 29: IOP possible**

On Sunday, another frontal wave is likely to pass over the COPS area with larger amounts of stratiform rain (GFS and GME models); ECMWF and NOGAPS models suggest a more northerly track and therefore much drier conditions in southern Germany. In any case, the day should be cloudy but dry at first, followed by partly stratiform, partly convective rain. As unstable air may be advected from the SW, thunderstorms cannot be excluded.

### **Day X+4, Monday, July 30: IOP possible**

From Monday onwards the pressure pattern over Europe still is very uncertain. Whereas the main run of GFS, 00 UTC, suggests a trough with very cold polar air to be present over central Europe, most ensemble members and other global models tend to a warmer version. A persistent westerly flow with relatively cool air masses and unstable weather conditions seems to be the most likely scenario.

#### **Your COPS Operations Center Team**

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