

Operations Plan of the Day

Friday, 27 July 2007, 1130 UTC

General Remarks:

In a rather strong mid/upper-level westerly flow only weak forcing for vertical velocities is to be expected over the COPS area in the course of **Friday**. Two weak frontal zones linger around the COPS area but will not become active. Some low-level clouds prevail early on, becoming scattered during the afternoon. Insolation leads to cumulus clouds (Cu hum, Cu med), partly embedded in stratiform layers. Chances for sunshine are best in the late afternoon/evening. Most of the area will stay dry, isolated weak showers are possible. A mean westerly wind of 25 kt is expected above 1000 m.

In the strong westerly flow aloft, an embedded upper-level short wave trough generates a frontal wave southwest of Ireland on Friday evening. Travelling quickly eastwards, it is expected to cross central Germany in the course of **Saturday**. 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. However, the most intense rain stays north of the COPS area. Ahead of the cold front, that is expected to move over the COPS area in the afternoon hours, slightly unstable air will be present, giving a chance of mainly embedded showers or a few thunderstorms, preferably in the eastern parts of the COPS area.

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.

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.

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.

Operations summary:

- # Day X (Friday):** no IOP
- # Day X+1(Saturday):** no IOP
- # Day X+2 (Sunday):** IOP planned
- # Day X+3 (Monday):** IOP possible (rather unlikely)
- # Day X+4 (Tuesday):** IOP possible

Mission Plans:

Day X, Friday, July 27: no IOP

In a rather strong mid/upper-level westerly flow only weak forcing for vertical velocities is to be expected over the COPS area in the course of **Friday**. Two weak frontal zones linger around the COPS area but will not become active. Some low-level clouds prevail early on, becoming scattered during the afternoon. Insolation leads to cumulus clouds (Cu hum, Cu med), partly embedded in stratiform layers. Chances for sunshine are best in the late afternoon/evening. Most of the area will stay dry, isolated weak showers are possible. A mean westerly wind of 25 kt is expected above 1000 m.

Day X+1, Saturday, July 28: no IOP

In the strong westerly flow aloft, an embedded upper-level short wave trough generates a frontal wave southwest of Ireland on Friday evening. Travelling quickly eastwards, it is expected to cross central Germany in the course of **Saturday**. 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. However, the most intense rain stays north of the COPS area. Ahead of the cold front, that is expected to move over the COPS area in the afternoon hours, slightly unstable air will be present, giving a chance of mainly embedded showers or a few thunderstorms, preferably in the eastern parts of the COPS area.

Aircraft:

SAFIRE ATR42 EUFAR flight planned, between 0900 -1500 UTC.

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

Day X+2, Sunday, July 29: IOP planned

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 (to be confirmed on Saturday, July 28):

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)
 # Achern (R): 05, 08, 11, 14, 17, 20 UTC (RS 92)
 # 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)
 *Operations Center recommendation
 # IMK Dropupsondes: no operations

Lidar systems:

Operation period 0500 – 2000 UTC; Scan scenario ScaS1.

Doppler-on-Wheels (DOW):

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

Sodar at Supersite R:

Operations requested from 1700 UTC throughout the night until Monday 0500
 UTC

Aircraft:

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

SAFIRE Falcon one flight possible between 0900 – 1500 UTC
 # DLR Falcon no flight
 # Do 128 0900 – 1200 UTC
 1300 – 1600 UTC
 # Dimona no flight
 # Ultralight no flight
 # SAFIRE ATR42 no flight

Day X+3, Monday, July 30: IOP possible

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

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

other aircraft missions might be possible

Day X+4, 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.

Your COPS Operations Center Team

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