

# COPS Weather Summary

9 August 2007

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Valid: Thursday 9 August 08:45 UTC to Tuesday 13 August 00:00 UTC

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## Synoptic Overview

The upper cut-off low centered over northern Italy will make only very slow eastward progress during the next few days. Warm/moist air is wrapping around this feature, so that a frontal boundary has established over southern Germany, with cool air to its south and the warm air to its north. In its wake, slight mid/upper ridging is anticipated on Saturday, before the next Atlantic trough approaches western continental Europe from the northwest. A vorticity maximum at its periphery will lift northeastwards and graze the COPS domain on Sunday afternoon. A more amplified trough will establish over the eastern Atlantic/western Europe towards the beginning of next week, expected to support a convectively active episode.

## Analysis and Forecast of Synoptic Controls in the COPS Region

### Today, Thursday 9 August

Strong zonally-oriented baroclinic zone is currently stretching across the COPS area and will remain focus for ascent and mainly stratiform precipitation. It seems that the maximum of precipitation will be present north of the low-level frontal boundary, and it should not affect the COPS area. However, light rain will likely continue through most of the day.

### Friday 10 August

Weak CAPE is present in the warm air mass north of the front, which is making slow southward progress during the day. Current thinking is that grey skies and rain will persist for most of the day, with a slight chance of mostly imbedded convection in the evening hours. However, only the very northern regions of the COPS area should be affected, and it appears well possible that the storms will not reach the COPS area at all.

### Saturday 11 August

Models indicate a transition from initially stratiform rain to convective precipitation during the day. This may be associated with breaks in the clouds which would rather quickly result in surface-based convection given nearly uncapped and nearly neutral thermodynamic profiles. However, this will strongly depend on how successful the sun will be in breaking the low-level clouds (mainly stratocumulus).

### Sunday 12 August

It seems that weak instability will develop with surface heating, resulting in isolated cumulonimbi primarily over the mountains around mid day and during the afternoon. Convective activity should gradually diminish after sundown.

## Extended Outlook

At the moment, Monday looks similar to Sunday in terms of the expected convective scenario. Towards the middle of next week, an Atlantic long-wave trough is simulated by GFS and ECMWF to approach the area, with increasing chance of widespread, and maybe well-organized convection.

**Today, Thursday 9 August**

|   |  |
|---|--|
| Time/location of first convective cloud development | Widespread stratiform cloudiness with rain, especially during the morning. |
| Time/location of convective storm initiation        | -  |
| Mode/coverage/evolution                             | -  |
| Cloud base  | Below 500 m.   |
| Storm motion  | -  |
| Maximum temperature                                 | Around 16 °C in the valleys.   |
| Precipitation                                       | 5 – 30 mm  |
| Severe weather threat                               | Low, but a flooding threat.  |

**Tomorrow, Friday 10 August**

|   |   |
|---|---|
| Time/location of first convective cloud development | Widespread stratiform and some weak embedded elevated convective cloudiness with rain. Along the northern boundary of the COPS region, surface-based convection is possible in the evening hours. |
| Time/location of convective storm initiation        | CI will likely not take place over the COPS region.   |
| Mode/coverage/evolution                             | Some clustered convective storms, partially embedded into stratiform precipitation, but mainly north of the COPS domain.  |
| Cloud base  | 500 – 1000 m.   |
| Storm motion  | From the NE at 5-10 m/s.  |
| Maximum temperature                                 | Around 20 °C in the valleys.  |
| Precipitation                                       | 0 – 20 mm.  |
| Severe weather threat                               | Low.  |

**Saturday 11 August**

|   |  |
|---|--|
| Time/location of first convective cloud development | Surface-based convective clouds forming anywhere, where sun breaks through.  |
| Time/location of convective storm initiation        | Initially some light rain, followed by isolated surface-based convection, not tied very strongly to the orography. |
| Mode/coverage/evolution                             | Single cells and small poorly-organized clusters.  |
| Convective cloud base                               | Around 750 m rising to 1000 – 1250 m.  |
| Storm motion  | Slow movement with a northerly component.  |
| Maximum temperature                                 | Up to 25 °C.   |
| Precipitation                                       | 0 – 15 mm.   |
| Severe weather threat                               | Low.   |

**Sunday 12 August**

|  |   |
|--|---|
| Time/location of convective storm initiation, Mode/coverage, Evolution | Initially, little cloudiness. Shallow convective clouds developing a few hours after sunrise. Isolated convective storms developing during the late morning or early afternoon, most likely over the mountains. Mostly slow-moving single cells of moderate intensity and small multicellular clusters. |
| Maximum temperature  | Up to 28 °C in the Rhine Valley.  |

|                       |   |
|-----------------------|---|
| Precipitation         | Up to 15 mm locally. Some places, especially in the valleys, will remain dry. |
| Severe weather threat | Low.  |

### **Monday 13 August**

|  |   |
|--|---|
| Time/location of convective storm initiation, Mode/coverage, Evolution | Initially little cloudiness. Chance of isolated surface-based convective storms, mostly over the mountains. Slow-moving single cells and small multi-cellular clusters. |
| Maximum temperature  | Up to 28 °C in the Rhine Valley. Most places remain dry.  |
| Precipitation  | Up to 10 mm locally.  |
| Severe weather threat  | Low.  |

### **Suggestions for IOP's and down days**

Uncertainties about surface-based storm activity occurring within the COPS area as well as the fact that conditions will be poor for LIDAR operations and the storms may be embedded in stratiform clouds, renders this day too marginal for an IOP recommendation. Saturday looks very similar in most respects and an IOP is not advised either. On Sunday, isolated diurnally-driven convective initiation is expected in response to orographically-induced circulations: a very nice day for COPS is expected and an IOP recommended. On Monday a similar evolution is likely and should be monitored for an IOP.