

## **COPS Weather Summary -Update-**

**23 August 2007**

Issued: Thursday 23 August 11:00 UTC

Valid: Thursday 23 August 11:00 UTC to Tuesday 28 August 00:00 UTC

Forecasters: Pieter Groenemeijer, Christian Ehmann

### **Update 23 August 11:00 UTC**

We have some new information regarding the weather evolution of the next days and early next week, mainly based on the model runs of ECMWF at 00 UTC and GFS at 06 UTC.

Regarding Friday, GFS that had rather copious amounts of convective precipitation before, and ECMWF that had almost no precipitation, seem to converge towards a scenario with very isolated storms developing over the mountains, which appears reasonable to us.

The GFS has reduced the amount of convective precipitation on Saturday compared with the older run. ECMWF persists in not developing any convective rain. Therefore, we tend to estimate that at most a few very isolated showers will occur across the COPS area and not necessarily there where most measurement devices are located. It may as well stay completely dry.

The consensus of the models indicates that the cold front approaching the COPS area from the north on Sunday will do so, but slower than previously simulated. It will likely stall near or over the COPS area on Monday as an inactive baroclinic zone with only little cloudiness.

On Tuesday, an impulse of the warm air in the south is expected ahead of a surface low developing over Spain and France according to both models. The rising of the warm and humid air may generate heavy rain over or near the area, and possibly severe thunderstorms within the warm air. The location of the front is a big uncertainty at the moment.

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## **COPS Weather Summary**

**23 August 2007**

Issued: Thursday 23 August 9:30 UTC

Valid: Thursday 23 August 9:30 UTC to Tuesday 28 August 00:00 UTC

Forecasters: Pieter Groenemeijer, Christian Ehmann

### **Synoptic Overview**

A large, complex upper-level low filled with cold air is located over France, the Benelux and western Germany. This system is expected to evolve into an elongated trough stretching from the Baltic Sea to Spain, with its axis just to the north-west of the COPS domain, on Friday. This should leave an unstable stratification that should allow for diurnally-driven convective storms to develop on Friday and possibly on Saturday. Later on Saturday, weak subsidence is forecast to warm the mid-troposphere, so that the chance of convection should decrease, so that no deep convection is expected on Sunday. Sunday evening a cold front is expected to pass the COPS area from the north, with cool, dry air in its wake. Hence the convective storm potential is very low on Monday, too.

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

#### **Thursday, 23 August**

Some scattered mid-level cloudiness is present over the COPS area. The near-neutral environment forecast by the models and weakening low-level cold air advection indicate that isolated showers should be possible mainly during the afternoon.

### Friday, 24 August

Friday should be a quite friendly day with some sunshine. In response to solar heating, scattered cumulus clouds will develop during the morning. Over the mountains a few isolated thunderstorms are expected to develop in the early afternoon.

### Saturday, 25 August

A quite sunny day is expected with scattered small and medium-sized convective clouds. The numerical models ECMWF and GFS are not very consistent in their predictions of convective showers. Their forecasts have shown everything between widespread showers and a completely dry day. Being in the vicinity of the trough axis, it appears possible that an isolated shower manages to form, most likely over the mountains.

### Sunday, 26 August

Sunday will be a mostly dry and sunny day. A cold front is expected to pass in the evening, which should bring some clouds and perhaps a drop of rain.

### Monday, 27 August

The COPS area is dominated by a strong area of high pressure. Some frontal stratocumulus will likely linger on before the sun breaks through and some shallow convective clouds develop. Deep convection is unlikely.

## Extended Outlook

After Sunday, a rather strong high-pressure ridge will dominate. The low-tropospheric air will also be too dry and cool to support deep, moist convection. The frontal zone that has passed the area late on Sunday may return northward late on Tuesday and produce prolonged stratiform and embedded convective rain over the COPS region. If this scenario does not come true, the COPS area should in principle remain in the stable air-mass. The chance of convective weather is, therefore, small in both cases.

### Today, Thursday 23 August

|   |  |
|---|--|
| Time/location of first convective cloud development | Shallow Cu already present.  |
| Time/location of convective storm initiation        | First showers have already taken place; likely new developments starting in the afternoon mainly in the southeastern parts of COPS area; local thunderstorm cannot be ruled out. |
| Mode/coverage/evolution                             | Few and isolated cells, getting weaker and maybe clustering towards the evening.   |
| Convective cloud base                               | Around 1600 m.   |
| Storm motion  | From the southwest at about 5-10 m/s.  |
| Maximum temperature                                 | Up to 26 °C in the Rhine Valley.   |
| Precipitation                                       | Up to 10 mm with local showers.  |
| Severe weather threat                               | Low.   |

### Tomorrow, Friday 24 August

|   |  |
|---|--|
| Time/location of first convective cloud development | Cu hum to Cu con from the morning hours on; a first shower over the Black Forest already in the early morning cannot be excluded, elsewhere isolated showers/local thunderstorms from around noon mainly over the mountains. |
| Time/location of convective storm initiation        |  |
| Mode/coverage/evolution                             |  |
| Cloud base  | Around 1600 m.   |
| Storm motion  | At about 5 m/s from the southwest.   |
| Maximum temperature                                 | Up to 28 °C in the Rhine Valley.   |
| Precipitation                                       | Up to 15 mm with local thunderstorm.   |
| Severe weather threat                               | Low.   |

### **Saturday 25 August**

|   |   |
|---|---|
| Time/location of first convective cloud development | Quite uncertain; towering Cu and first showers over mountains in the morning hours possible; main activity of showers and thunderstorms, if they will form over COPS area, preferably tied to the mountains in the afternoon. |
| Time/location of convective storm initiation        |   |
| Mode/coverage/evolution                             |   |
| Cloud base  | Around 1500 m.  |
| Storm motion  | Slow-moving.  |
| Maximum temperature                                 | 27-29 °C.   |
| Precipitation                                       | Up to 20 mm locally with quasi-stationary thunderstorms.  |
| Severe weather threat                               | Low to medium. Slight risk of localized flash floods in case quasi-stationary thunderstorms become heavy, as forecast by the latest GFS run.  |

### **Sunday 26 August**

|  |   |
|--|---|
| Time/location of convective storm initiation, Mode/coverage, Evolution | Mainly only shallow and non-precipitating cumulus clouds are to be expected; but a little non-convective rain cannot be excluded in the late afternoon/evening. |
| Maximum temperature  | Up to 25 °C.  |
| Precipitation  | 0-5 mm.   |
| Severe weather threat  | -   |

### **Monday 27 August**

|  |   |
|--|---|
| Time/location of convective storm initiation, Mode/coverage, Evolution | Only shallow cumulus clouds after stratiform clouds have dissolved. |
| Maximum temperature  | 22-24 °C.   |
| Precipitation  | -   |
| Severe weather threat  | -   |

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

Only a few showers are expected today, so an IOP seems to be of lower interest. Convective activity is likely to increase on Friday and Saturday. Friday looks like an interesting day to study surface-based convective initiation. Saturday is a little more uncertain at this point. Sunday and Monday do not look very exciting for COPS goals.