

COPS Weather Summary

22 August 2007

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Forecasters: Pieter Groenemeijer, Christian Ehmann

Synoptic Overview

A large mid-tropospheric cut-off low is located over western continental Europe has multiple cores, one of which is located over the Belgian-German border region, east of which a strong southwesterly jet is located. A weakening back-bent occlusion stretches from the Rhineland over Lorraine towards western France. The remaining cloudiness should still affect the COPS area on Thursday. On Friday the large cut-off low should evolve into an elongated trough stretching from Portugal to Southern Scandinavia. As the axis of the trough – that is associated with the lowest temperatures in the mid-troposphere – lies directly over the COPS area, just about enough instability should be in place for isolated shower development. In the weekend subsidence is expected that should limit instability.

Analysis and Forecast of Synoptic Controls in the COPS Region

Wednesday, 22 August

A mid-upper trough over the western Mediterranean Sea, just of the Spanish east coast, is expected to move rapidly northeastward and the upward vertical motion associated with it should affect the COPS area during the second half of the evening. Moist near-neutrally stratified air will remain over the eastern COPS area on Wednesday and Thursday, whereas the western part will deal with weakening stratiform precipitation. Competing low-level cold air advection and weak insolation will determine whether the sufficient destabilization will occur for isolated convective shower development. Biggest chances appear to be for the southern Black Forest and the Swabian Jura, but a few weak showers cannot be ruled out elsewhere, too.

Thursday, 23 August

On Thursday, some scattered mid-level cloudiness is expected 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 where the sun breaks through for a longer time. Though not very likely, even a thunderstorm cannot be ruled out.

Friday, 24 August

Both the surface and the upper low weaken on Friday leading to a quite friendly day with lots of sun. Mostly shallow cumulus clouds will develop during the morning. Gradually, a few isolated showers and thunderstorms will likely develop over the mountains.

Saturday, 25 August

Under high pressure influence Saturday will be mostly sunny. A small chance exists that an isolated shower manages to form over the mountains.

Sunday, 26 August

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

Extended Outlook

After Sunday, a rather strong high-pressure ridge will dominate. The forecast calls for relatively sunny and dry weather.

Today, Wednesday 22 August

Time/location of first convective cloud development	Shallow Cu already present.
Time/location of convective storm initiation	Showers most likely in the late afternoon over the southeastern parts of the COPS area.
Mode/coverage/evolution	Few isolated showers, maybe clustering towards the evening.
Convective cloud base	Around 1400 m.
Storm motion	From the southwest at about 5 m/s.
Maximum temperature	Up to 23 °C.
Precipitation	Up to 5 mm with local showers. Higher values are possible with stratiform rain in the west.
Severe weather threat	Very low.

Tomorrow, Thursday 23 August

Time/location of first convective cloud development	Few and isolated showers in the late afternoon, a thunderstorm or two cannot be excluded.
Time/location of convective storm initiation	
Mode/coverage/evolution	
Cloud base	Around 1600 m in the afternoon, but low-level clouds in the morning hours.
Storm motion	At about 5-10 m/s from the southwest.
Maximum temperature	Up to 25 °C in the Rhine Valley.
Precipitation	Up to 10 mm.
Severe weather threat	Low.

Friday 24 August

Time/location of first convective cloud development	Cu hum to Cu con from the late morning hours on, developing into a few isolated showers or thunderstorms in the afternoon.
Time/location of convective storm initiation	
Mode/coverage/evolution	
Cloud base	Around 1500 m.
Storm motion	At about 5 m/s from the southwest.
Maximum temperature	Up to 27 °C in the Rhine Valley.
Precipitation	Up to 10 mm.
Severe weather threat	Low.

Saturday 25 August

Time/location of convective storm initiation, Mode/coverage, Evolution	Showers preferably towards the southeast of COPS region possible.
Maximum temperature	25-28 °C.
Precipitation	Up to 10 mm possible.
Severe weather threat	Low.

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 few rain drops cannot be excluded over the northern parts of COPS area in the evening.
Maximum temperature	24-27 °C.
Precipitation	0-5 mm.
Severe weather threat	-

Suggestions for IOP's and down days

As convective clouds and few showers are expected in places over the COPS area, IOP 17b is ongoing today. On Thursday and Friday there will be also some convective activity. Regarding that the BAe aircraft is available on Friday again, another IOP is planned. Saturday the situation is somewhat uncertain concerning shower development. Nevertheless, the clear start of the day is quite certain and should provide good conditions for the planned Lidar activities. Sunday doesn't look interesting for COPS purposes from the current point of view.