

COPS Weather Summary

30 July 2007

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Synoptic overview

After the passage of a frontal wave, currently located over the Baltic area and merging with the quasistationary low pressure complex over Scandinavia, a rather strong northwesterly flow has been established over central and northwestern Europe. Further to the west, a ridge builds up, stretching from Spain towards Ireland. Cold air will be present over central Europe at least until Tuesday, temporarily affected by mid/upper-level short wave troughs that are embedded in the northwesterly flow, giving additional humidity and forcing. Their influence should be strongest in the vicinity of the Baltic Sea.

Being quasi-stationary at first, the ridge progresses eastwards on Tuesday, crossing Germany on Wednesday.

Ahead of a long-wave trough at the western edge of Europe, a surface low pressure area is expected to form over northern Spain/southern France. As the surface low travels to northern Germany on Thursday, the southwesterly flow increases, advecting warmer and moister air into central Europe.

Shortening its wavelength the trough is expected to move eastwards on Friday, again followed by cooler air masses spreading into central Europe.

Analysis and forecast of synoptic controls in the COPS region

Today (Monday), 30 July

In the wake of a frontal wave, the cold front of which has crossed COPS area yesterday in the late afternoon, a strong northwesterly flow has been established. Embedded mid/upper-level short wave troughs give some forcing, though being of less intensity in southwestern Germany. Morning Sc over the Black Forest has evolved into Cu, accompanied by Cu elsewhere in the course of the day. As an inversion layer is present around 700 hPa, most Cu will not grow deeper. However, there is a chance for few Cu con, and – although unlikely – even one shower or two cannot be ruled out.

Tomorrow (Tuesday) 31 July

A mid/upper-level short wave trough may affect the COPS area generating partly low-, partly mid-level stratiform cloudiness in the night to Tuesday. Also Ci or Cs is likely to develop. It's still hard to give a precise forecast concerning the total cloud cover. The uncertainty continues on Tuesday as another mid/upper-level short wave trough provides some extra humidity and forcing. Skies seem to be cloudier than on Monday, however, the sun gets a good portion of the day. Sunniest conditions are expected towards the southwest. As a slowly eastward moving high pressure ridge builds up over France, mid-level subsidence in the southwestern parts of Germany becomes evident in the course of the day. If the subsidence leads to a pronounced inversion, cumulus clouds may partly spread into Stratocumulus, dissolving in the evening/night to Wednesday.

Wednesday 1 August

On Wednesday, the ridge is expected over Germany. Strong mid-level subsidence creates fair, dry and warmer conditions in the COPS area. Only few and shallow Cu are likely to develop mainly over mountains. Ahead of a mid/upper-level long wave trough at the western edge of Europe, a surface low pressure area is expected to form over northern Spain/southern France.

Thursday 2 August and Friday 3 August

On Thursday, as the surface low travels to northern Germany, the southwesterly flow increases, advecting warmer and moister air into the COPS area. The remnants of a Mesoscale Convective System that might have developed over central France in the night before, could affect the COPS area in the morning hours already, leading to partly stratiform, partly convective cloudiness and some rain throughout the day. Thunderstorms are most likely in the vicinity of the passing cold front, that is expected to cross COPS area in the evening hours.

On Friday, in the wake of the eastward travelling surface low COPS area gets under the influence of a trough again. The flow of cool air will be renewed leading to a day with large amounts of stratiform clouds and rain of embedded convective nature.

Extended outlook

According to most model runs, as a remnant of the aforementioned trough a cut-off low is expected over the Balkan and the central Mediterranean Sea in the course of the weekend. It might affect also central Europe, whereas further to the west a strong high pressure area is supposed to develop.

Today, Monday 30 July

Time/location of first convective cloud development	Shallow cumulus clouds already present.
Time/location of convective storm initiation	-
Mode/coverage/evolution	-
Convective cloud base	Around 800 m, rising to about 1700 m in the afternoon.
Storm motion	-
Maximum temperature	Up to 23 °C in the Rhine Valley.
Precipitation	-
Severe weather threat	-

Tomorrow, Tuesday 31 July

Time/location of first convective cloud development	Sc possible in the morning ; shallow cumulus clouds from around noon.
Time/location of convective storm initiation	-
Mode/coverage/evolution	-
Convective cloud base	About 900 m, rising to around 1500 m in the afternoon.
Storm motion	-
Maximum temperature	20-22 °C in the Rhine Valley.
Precipitation	-
Severe weather threat	-

Wednesday 1 August

Time/location of first convective cloud development	Few shallow cumulus clouds in the afternoon.
Time/location of convective storm initiation	-
Mode/coverage/evolution	-
Convective cloud base	Around 2200 m.
Storm motion	-
Maximum temperature	24-27 °C in the Rhine Valley.
Precipitation	-
Severe weather threat	-

Thursday 2 August

Time/location of convective storm initiation, Mode/coverage, Evolution	Remnants of nighttime MCS possible in the early morning hours already; local thunderstorms mainly of embedded character in the course of the day.
Convective cloud base	Around 900 m, rising to about 1300 m.
Storm motion	At about 15 m/s from the southwest.
Maximum temperature	24-28 °C depending on insolation.
Precipitation	Locally 20 mm with showers/thunderstorms possible.
Severe weather threat	Low.

Suggestions for IOP's and down days

Today and tomorrow are dominated by cold polar air. Shallow cumulus clouds, partly embedded, and mainly dry conditions will prevail. IOP's are not recommended, apart from some flux measurements or - if there is interest - the development of shallow convection.

On Wednesday, only few shallow cumulus clouds, tied to hilly regions, will form. An IOP is of lower interest. An upstream flight towards the sensitive region in southwestern Europe might be operated. Convective activity and the potential for thunderstorms increase on Thursday. Chances for convective rain also on Friday.