COPS Weather Summary 2 August 2007

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Synoptic overview

The COPS region is located under a southwesterly flow between a mid-upper low pressure over the Norwegian Sea and a ridge that extends from Austria to the Baltic States. A shortwave trough embedded within this flow is expected to pass the COPS region around 12 UTC today. It is associated with a poorly-defined cold front. South of a surface low over the SE Netherlands, a strong wind from the southwest is expected in the lower troposphere (about 15-20 m/s at 850 hPa).

Analysis and forecast of synoptic controls in the COPS region

Today, Thursday 2 August
The remnants of an MCS that has developed over France on Wednesday evening have moved to the northeast of the COPS area. In its wake, some sunshine is possible that may help to create some new instability. A surface trough that moves eastward over north-central France would then likely be the focal point of the convective activity. A problem that may prevent well-developed storms to form is the abundant low-level clouds currently west of the COPS area and lack of insolation preventing a fair amount of instability to form. Also, forcing may prove to be too weak. Nevertheless a few showers are expected during the afternoon.

Friday 3 August
In the early hours of Friday, another shortwave trough will cross the COPS area from the northwest. A lack of potential instability will however prevent anything more than weak embedded convective activity to form. Rather high cloud cover should remain over the COPS area during Friday. Ridging will likely cause sufficient subsidence during the afternoon that larger breaks form. Skies will clear towards the evening.

Saturday 4 August
On Saturday, cloudiness should be limited to a few small convective clouds mainly over the hills.

Sunday 5 August and
Similar weather is expected on Sunday. Renewed warm air advection from the southwest should commence by then and the day will likely turn out to be rather warm.

Monday 6 August and Tuesday 7 August
Consensus exists among the numerical models about the approach of a new trough on Monday and Tuesday that will evolve into a cut-off low. Currently it appears most likely that convective activity will affect the COPS region in the night of Monday to Tuesday.

Extended outlook

Today, Thursday 2 August

Time/location of first convective cloud development	In the morning hours, mainly stratiform clouds already present in northern part of COPS area. Embedded convective clouds coming from french Jura in the SWly flow are about to affect the southern part of COPS area. In the afternoon, convective clouds will form across the COPS area.
Time/location of convective storm initiation	Renewed surface-based convective cloud development in some clearings during the afternoon evolving into a few showers and weak thunderstorms are possible over the whole COPS area.
Mode/coverage/evolution	Isolated showers/thunderstorms, small clusters or even line-organized thundery showers during the afternoon
Convective cloud base	Initially 700 m, rising to 1100 m
Storm motion	In the morning about 15-20 m/s from the southwest. In the afternoon, about 15 m/s from the west veering to the north-west in the evening.
Maximum temperature	Up to 26 °C in the Rhine Valley according to the insolation.
Precipitation	Between 5-15 mm possible in places underneath isolated showers or thunderstorms.
Severe weather threat	Some gusty winds up to 15-20 m/s possible. Otherwise, low.

Friday 3 August

Time/location of first convective cloud development	Embedded Cu already before noon. Isolated medium-sized cumulus convection in the afternoon.
Time/location of convective storm initiation	Partly convective/stratiform rains that arrive in the night before will continue through the morning. Some showers in the afternoon mainly on the mountains dying out in the evening. Thunderstorms are unlikely.
Mode/coverage/evolution	-
Convective cloud base	Around 600-800 m in the morning hours, rising to 1200 m in the afternoon
Storm motion	About 10 m/s from the northwest.
Maximum temperature	Up to 22 °C in the Rhine Valley.
Precipitation	Locally 10 mm from showers.
Severe weather threat	-

Saturday 4 August

Time/location of first convective cloud development	Few small Cu from 08 UTC onwards in the plains. Scattered Cu in the mountains, possibly spreading out somewhat under the inversion layer. Convective cloud coverage will diminish in the late afternoon.
Time/location of convective storm initiation, Mode/coverage, Evolution	-
Convective cloud base	Initially 800 m, rising to about 1400 m.
Storm motion	-
Maximum temperature	Up to 28°C in the Rhine Valley.
Precipitation	-
Severe weather threat	-

Sunday 5 August

Time/location of first convective cloud development	At the most, a few shallow convective clouds in the late morning over the mountains, vanishing during the afternoon. Mainly blue convection in the afternoon.
Time/location of convective storm initiation, Mode/coverage, Evolution	-
Convective cloud base	Around 2000 m
Storm motion	-
Maximum temperature	Up to 30°C in the Rhine Valley.
Precipitation	-

Suggestions for IOP's and down days

Today, during the ongoing IOP isolated and line-organised convection in the strong southwesterly flow both tied to diurnal evolution and the late-coming trough can be studied. On Friday, weak embedded convection is expected in the morning and rather fair convection in the afternoon. As no severe weather is expected, there is little interest to have an IOP. On Saturday, since convection will not lead to shower, a down day looks to be the best choice. On Sunday, given the large-scale trough deepening in the bay of Biscay into the southern Iberian Peninsula, some thunderstorms are likely to brew over central Spain. From Monday onwards, the timing of the progression of the trough synoptic setting remains a bit uncertain. On Monday, GFS and ECMWF advertise a thundery frontal wave developing on south-western France that moves to the northeast. On Tuesday, both models make the trough evolve into a cut-off low over Britanny again leading to instability over western Europe. This scenario will naturally be updated in the following days.