

COPS Weather Summary - UPDATE 8 August 2007

Issued: Tuesday 8 August 13:15 UTC

Valid: Tuesday 8 August 13:15 UTC to Monday 13 August 00:00 UTC

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UPDATE

No major adjustments to be made on this morning's forecast ... Numerous thunderstorms currently developing over northern Italy and southern France are indicative of the upward motion associated with the eastward progressing French upper trough. Temporarily, the rain has ceased over most of the COPS domain now, and even some breaks in the cloud cover seem to be possible in the northern COPS domain before early evening. During the next few hours, the aforementioned upward motion regime will spread across the COPS region, being accompanied by an intense large-scale precipitation region, which will affect the area during the night and on Thursday. The available mesoscale models as well as the latest GFS place the maximum of accumulated precipitation during Wednesday night over the southern COPS area.

For Friday, the convective threat seems to be confirmed. The LM assumes clear skies and rather strong surface heating over the COPS area towards the afternoon, but it does not initialize convection. The GFS, however, does, but with the bulk of the activity occurring north of the COPS area. However, in this scenario, storms would affect the northern COPS region towards the evening.

Saturday remains uncertain, with GFS still being reluctant to develop positive CAPE, so the convective threat seems to be quite low. However, rain showers with cloud tops somewhat below the 500 hPa appear to be likely. Sunday's resurrection of deep convective activity is confirmed in the latest GFS run.

It follows the forecast from 8 August 08:30 UTC

Synoptic overview

High-amplitude upper trough over western Europe is in the process of closing off into a cut-off low over France, which will subsequently move into the northern Mediterranean/N Italy where it will remain anchored until early Friday morning. Thereafter, it is simulated to progress eastward towards the Black Sea until Sunday night. At low levels, a weak but large cyclonic circulation is maintained over central Europe by the upper low, which acts to advect the weakly unstable air over the eastern half of Europe westward again.

Analysis and forecast of synoptic controls in the COPS region

Today, Wednesday 8 August

Currently, the main 850 hPa front is aligned north/south, stretching right across the COPS area. With the eastward progression of the upper low, increasing DCVA-forced ascent will overspread the COPS area late in the day, which will aid in increasing frontogenetic forcing, resulting in strong mesoscale ascent, which will be associated with extensive stratiform precipitation in the late afternoon and evening hours, continuing through the night.

Thursday 9 August

The rain will likely continue during most of the day, due mainly to warm advection associated with the westward advection of the warm/unstable air mass over eastern Europe.

Friday 10 August

With the arrival of the warm/moist air, GFS simulates weak CAPE in the northern portions of the COPS region. The details of the convective scenario remain somewhat uncertain. Present thinking is that weak solar heating will occur despite the presence of cloudiness, initiating scattered showers and thunderstorms in a minimally capped environment.

Saturday 11 August

The current GFS does not advertise deep instability over the COPS region, so the development of deep convection is uncertain. Still, CAPE should be deep enough to allow for scattered showers.

Extended outlook

Models agree in developing more of a progressive upper flow regime over Europe, with the next deeper trough with significant convective weather not expected until Wednesday. Warm/moist advection ahead of this trough is currently modeled by the GFS to result in some CAPE and convective precipitation on Wednesday. This scenario is also supported by the latest ECMWF run, and it could last until the end of next week.

Today, Wednesday 8 August

Time/location of first convective cloud development	Widespread stratiform cloudiness with rain, especially during the morning and evening. Weak embedded elevated convection possible.
Time/location of convective storm initiation	-
Mode/coverage/evolution	-
Cloud base	Below 500 m.
Storm motion	-
Maximum temperature	Around 18 °C in the valleys.
Precipitation	10 – 50 mm
Severe weather threat	Low.

Tomorrow, Thursday 9 August

Time/location of first convective cloud development	Widespread stratiform cloudiness with rain, especially during the morning and evening. Weak embedded elevated convection possible.
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	15 – 80 mm. Most precipitation expected in the southern Vosges.
Severe weather threat	Some threat of flooding problems.

Friday 10 August

Time/location of first convective cloud development	Surface-based convective clouds forming most likely over northern parts of the COPS area.
Time/location of convective storm initiation	Possibility of some elevated convection ongoing in the early morning, followed by scattered surface-based storms. Surface-based storms forming in the northern COPS area not tied to orography in the mid- and late morning. Elsewhere elevated convection and stratiform rain.
Mode/coverage/evolution	Small poorly-organized multicell clusters.
Convective cloud base	Mostly between 500 and 1000 m.
Storm motion	From the NE at about 5 m/s.
Maximum temperature	Up to 21 °C in the north of the COPS area.
Precipitation	15 - 50 mm.

Severe weather threat	Some threat of flooding problems.
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Saturday 11 August

Time/location of convective storm initiation, Mode/coverage, Evolution	A few showers possible.
Maximum temperature	Up to 22 °C in the Rhine Valley.
Precipitation	10-20 mm, in the mountains up to 40 mm.
Severe weather threat	Low

Sunday 12 August

Time/location of convective storm initiation, Mode/coverage, Evolution	Chance of surface-based convective storms in response to solar heating.
Maximum temperature	Up to 25 °C in the Rhine Valley.
Precipitation	Up to 10 mm.
Severe weather threat	Low

Suggestions for IOP's and down days

In order to measure the heavy rain event today and tomorrow, IOPs may be carried out, even though LIDAR operations will not be possible. Friday looks somewhat more promising with more convectively induced rain and possibly surface-based convection as well, and should be monitored for the possibility of an IOP. On Saturday and Sunday the potential for surface-based storms appears to be present again.

