

COPS Weather Summary

6 August 2007

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Forecasters: Pieter Groenemeijer

Synoptic overview

Analysis and forecast of synoptic controls in the COPS region

Today, Monday 6 August

A diffuse frontal zone located from the Benelux countries over central France to Spain forms the western boundary of a plume of warm air. East of this zone, a convergence line has formed, partly in response to a vorticity maximum moving northeastward over France. Along the zone, surface-based convective storms are expected to form during Monday. Those storms will likely affect the COPS area late Monday afternoon and during the evening. Elevated convection and stratiform rain is expected near the cold front.

Tuesday 7 August and Wednesday 8 August

On Tuesday, the position on the back of the aforementioned vorticity maximum should suppress any precipitation. Later the large-scale trough approaching the COPS region from western France is expected to cause widespread upward vertical motion resulting in stratiform and partly convective rain. The numerical models are in disagreement about the exact evolution on Tuesday and Wednesday, which is dependent on the location and timing of small vorticity maxima rotating around the low. It appears that an event with widespread heavy rain over or near the COPS area is quite likely, either late on Tuesday or on Wednesday.

Thursday 9 August

A polar air-mass in northwesterly flow is expected to be over the COPS area on Thursday, in which shallow convective showers may form. Another possibility is that the mid-upper low will still linger on over the COPS area.

Friday 10 August

The weather on Friday is rather uncertain. The stratiform and elevated convective rains in the range of the mid/upper-low may be still near the COPS area. It may also be that this rain has already moved off to the east and the weather is relatively fine, with a few showers. Models disagree about this.

Extended outlook

An extended outlook is hard to give, seeing the divergent model solutions. Towards the upcoming weekend, ECMWF lets another active mid/upper low approach the area from the west rather rapidly, whereas GFS 00 has a ridge building just west of the COPS area. The UK Met. Office model and GFS 00 Z let the mid/upper-low that affects COPS on Tuesday and Wednesday linger on and weaken over the COPS area with associated cool, wet weather.

Today, Monday 6 August

Time/location of first convective cloud development	Stratocumulus in the morning, gradually changing to cumulus. Towering cumulus in the late afternoon developing into a few Cb's.
Time/location of convective storm initiation	Between 15 and 18 UTC storms developing over the Vosges and Black Forest. Later, development elsewhere and advection from clustered convection from France.
Mode/coverage/evolution	Firstly, relatively isolated single- and multicell storms, increasing in coverage during the night. More showers advected into the COPS area from the west.
Convective cloud base	1500 - 2000 m
Storm motion	Mainly tied to the mountains and near stationary, later northeastward at about 5-10 m/s.
Maximum temperature	Up to 33 °C in the Rhine Valley.
Precipitation	5-20 mm, locally up to 30 mm under near-stationary showers.
Severe weather threat	Some hail up to around 2 cm possible, as well as a number of very localized downbursts.

Tomorrow, Tuesday 7 August

Time/location of first convective cloud development	Widespread stratiform and embedded convective clouds.
Time/location of convective storm initiation, Mode/coverage, Evolution	A few embedded thunderstorms. Surface-based convective development possible east of the Black Forest.
Convective cloud base	500 - 1000 m
Storm motion	To the northeast at 10 m/s
Maximum temperature	Up to 25 °C in larger clear spells.
Precipitation	5 - 15 mm, possibly more in the evening if an organized system moves into the area.
Severe weather threat	Low.

Wednesday 8 August

Time/location of first convective cloud development	Widespread stratiform and embedded convective clouds.
Time/location of convective storm initiation, Mode/coverage, Evolution	A few embedded thunderstorms. Surface-based convective development possible in the northeast of the COPS region.
Convective cloud base	800 - 1200 m
Storm motion	From the southwest at around 10 m/s.
Maximum temperature	Up to 20 °C in the Rhine Valley.
Precipitation	15-30 mm, or up to 80 mm if a larger slow-moving rain zone affects the COPS area.
Severe weather threat	Some flash flood threat present.

Thursday 9 August

Time/location of first convective cloud development	Mostly stratiform clouds with possibly embedded convection. Surface-based convection, with weak showers possible in the post-frontal air-mass. Quite uncertain.
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Time/location of convective storm initiation, Mode/coverage, Evolution	
Maximum temperature	Up to 20 °C in the Rhine Valley.
Precipitation	10 mm, 20-60 mm if a larger slow-moving rain zone affects the COPS area.
Severe weather threat	Possibly still some threat of flash flooding in the morning.

Friday 10 August

Time/location of first convective cloud development	Stratiform clouds with possibly embedded convection. Surface-based convection possible in larger areas with reduced mid- and upper-level cloud cover. Quite uncertain.
Time/location of convective storm initiation, Mode/coverage, Evolution	
Maximum temperature	Up to 23 °C in the Rhine Valley.
Precipitation	5 - 15 mm.

Suggestions for IOP's and down days

Monday looks very interesting and measurements should be done despite it being too late to call for an IOP. On Tuesday and Wednesday the likelihood of an intense -partly convective- rain event suggests IOPS on those days. Stabilization towards the end of the week suggests that Thursday and Friday will not be as interesting.