

COPS Weather Summary

17 August 2007

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Forecasters: Christian Ehmann, Pieter Groenemeijer

Synoptic Overview

A broad long-wave trough is still present over western Europe. It progresses to the east very slowly during the next few days. Several shortwave troughs rounding this larger trough move eastwards and determine the evolution of the weather until Tuesday. Then, a cut-off low is expected to develop over central Europe and gradually move into the Mediterranean Sea region.

Analysis and Forecast of Synoptic Controls in the COPS Region

Today, Friday 17 August

Isolated showers will develop over parts of the COPS area ahead and near the axis of an upper-level trough passing the area from the west. The convective clouds will likely reach up to an inversion at 4-5 km altitude where temperatures around -8 °C should be low enough to let them produce precipitation. The clouds may locally overshoot that level and become 7-8 km tall. After about 13 UTC shower coverage is expected to diminish from the west as subsidence sets in behind the trough.

Saturday, 18 August

Subsidence should render the atmosphere unresponsive of deep convective activity. Convection will be limited to shallow cumulus clouds.

Sunday, 19 August

Another shortwave trough and an associated cold-front should approach the area. It is likely that this results in new shower activity during the late afternoon and evening across the south-eastern half of the COPS domain.

Monday, 20 August

Although numerical models start to diverge significantly here – some new precipitating convection is expected in any case within the post-frontal air-mass.

Extended Outlook

After Monday, the forecast becomes quite uncertain. GFS has a rather prominent ridge of high pressure building over the area at the surface, whereas a rather large low-pressure system over northern Germany is forecast in the ECMWF and UKMO models. The latter solutions allow for significantly more convective development than the former. The relatively high unpredictability is also reflected in the ECMWF ensemble forecast system solutions.

Today, Friday 17 August

Time/location of first convective cloud development	Cumulus clouds are already present.
Time/location of convective storm initiation	Showers are expected to develop before noon.
Mode/coverage/evolution	Mainly few weak showers, diminishing during the afternoon.
Convective cloud base	Around 1200 m, rising to about 1500 m in the afternoon.
Storm motion	From the west at about 10 m/s.
Maximum temperature	Up to 22 °C in the Rhine Valley.
Precipitation	Up to 5 mm with showers.
Severe weather threat	Low.

Tomorrow, Saturday 18 August

Time/location of first convective cloud development	Shallow convective and non-precipitation clouds from the late morning on.
Time/location of convective storm initiation	
Mode/coverage/evolution	
Cloud base	Around 1600 m.
Storm motion	-
Maximum temperature	Up to 24°C in the Rhine Valley.
Precipitation	-
Severe weather threat	-

Sunday 19 August

Time/location of first convective cloud development	Towering Cu in the course of the day; few showers or a local thunderstorm in the late afternoon/evening possible.
Time/location of convective storm initiation	
Mode/coverage/evolution	
Cloud base	Around 1800 m.
Storm motion	At about 10-15 m/s from the southwest.
Maximum temperature	Up to 27 °C.
Precipitation	Up to 15 mm locally.
Severe weather threat	Low.

Monday 20 August

Time/location of convective storm initiation, Mode/coverage, Evolution	Some stratiform rain at first; widespread and mainly weak showers towards noon and in the afternoon.
Maximum temperature	20-22 °C.
Precipitation	Up to 15 mm from stratiform rain and showers.
Severe weather threat	Low.

Tuesday 21 August

Time/location of convective storm initiation, Mode/coverage, Evolution	Uncertain; present indications are that most precipitation will be of stratiform nature.
Maximum temperature	20-23 °C.
Precipitation	5-10 mm.
Severe weather threat	Low.

Suggestions for IOP's and down days

Today showers up to around 5 km AGL are expected around noon, so the BAe aircraft will fly supported by additional ground measurements. On Saturday, only shallow convective clouds should form, so an IOP is not recommended. A moderately interesting evolution is expected late on Sunday with some storms forming locally and others being advected into the area. Detailed forecast for the beginning of the next week is quite uncertain. Monday seems to be another moderately interesting day with at least partly convective precipitation in the course of the day, whereas Tuesday looks less promising for COPS purposes from the current point of view.