PRODUCT NAME:	PR-OBS-04v1.1	
CASE STUDY PERIOD: 06 Nov 2011	**METEOROLOGICAL EVENT:** Cold front overpass over Italy, with convection embedded	
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METEOROLOGICAL EVENT DESCRIPTION

06NOV2011 00Z
500 hPa Geopotential (gpdm) und Bodendruck (hPa)
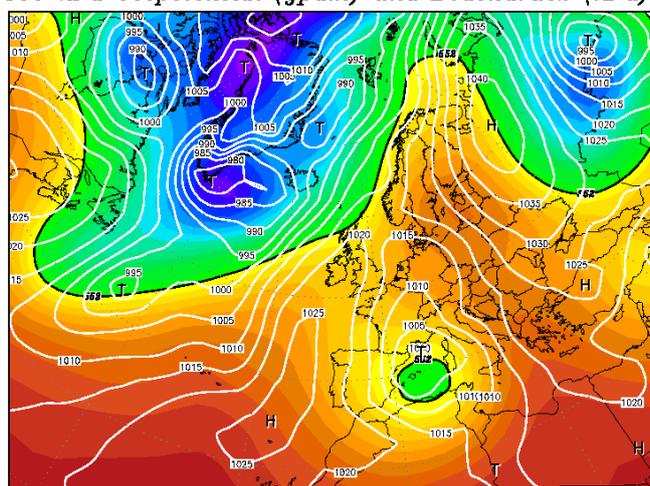
Daten: Reanalysis des NCEP
(C) Wetterzentrale
www.wetterzentrale.de

On November the 6th at 00:00 UTC a well structured and deep depression over Balearic Islands is present and moved to the north east in the following hours. A cold front is moving parallel to the Italian Peninsula, and the cold airmass interacts with warm and moist Mediterranean air, generating frontal cloudiness. The front swept Italy around noon.

The SEVIRI IR image at 11:00 UTC on 06/11 (on the right) shows the frontal cloudiness along the Italian Peninsula. The sharp cloud edge on the cold part indicates the presence of convective development, embedded in the mostly stratified cloud shield. Orographic effect is expected to locally enhance precipitation, that can reach relatively high rates. During the front overpass, both convective and stratiform precipitation types occur.
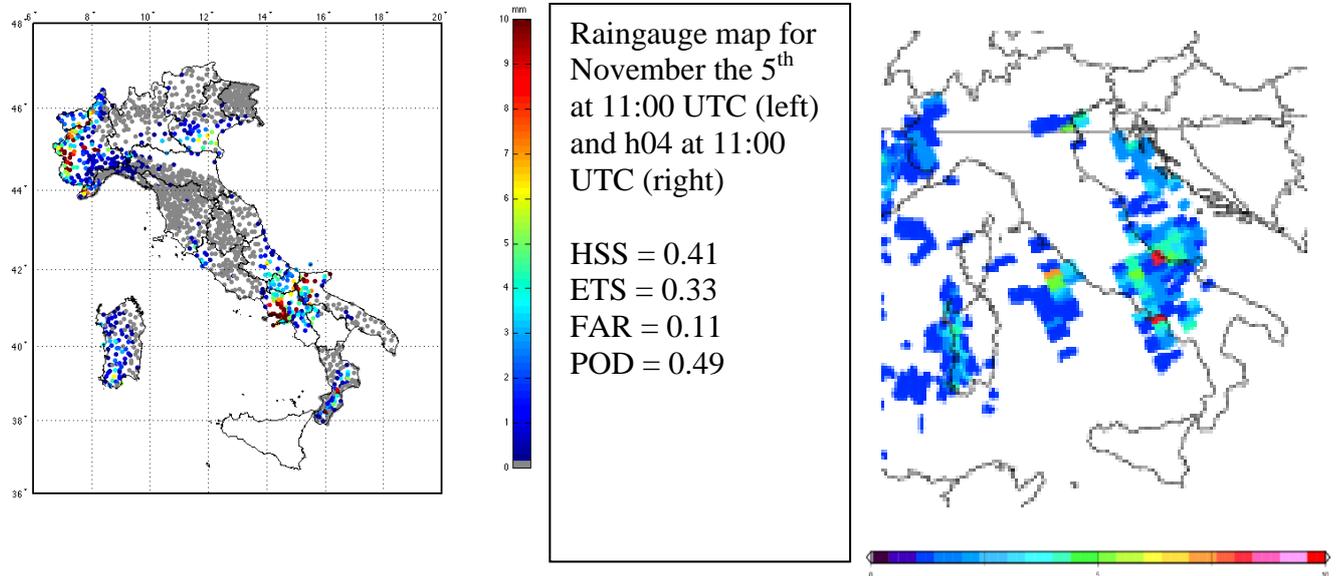
Reference data: Italian hourly raingauges network (provided by DPC)
Ancillary data (used for case analysis):
SEVIRI images (courtesy of University of Dundee – NEODAAS)
Weather charts (courtesy of Wetterzentrale)

RESULTS OF COMPARISON

Raingauge map for November the 5th at 11:00 UTC (left) and h04 at 11:00 UTC (right)

HSS = 0.41
ETS = 0.33
FAR = 0.11
POD = 0.49

COMMENTS

The h04 product is able to resolve the precipitation spot over central Italy, where also high precipitation is correctly classified and contributes to a rather high HSS value. On the other hand, precipitation is largely underestimated over north-western Italy, in terms of intensity, while over northern Apennines and over Calabria the wet areas are completely missing in the h04 map. The rain over Sardinia is only partially detected. The overall result is a quite low skill in detecting rain areas (POD=0.49), but good capability in classifying rainrates.

Indications to Developers

It has to be investigated the reason for the complete underestimation of some rain areas, where also relatively high rainrates are measured.