| PRODUCT NAME:	**PR-OBS-01v1.5**	
CASE STUDY PERIOD: 31 Jan – 02 Feb 2012	METEOROLOGICAL EVENT: Long lasting and intense snowfall all over Italy	
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OPERATIONAL CHAIN INSTITUTE: CNMCA	Responsables: Zauli F.	Contact point: zauli@meteoam.it

METEOROLOGICAL EVENT DESCRIPTION
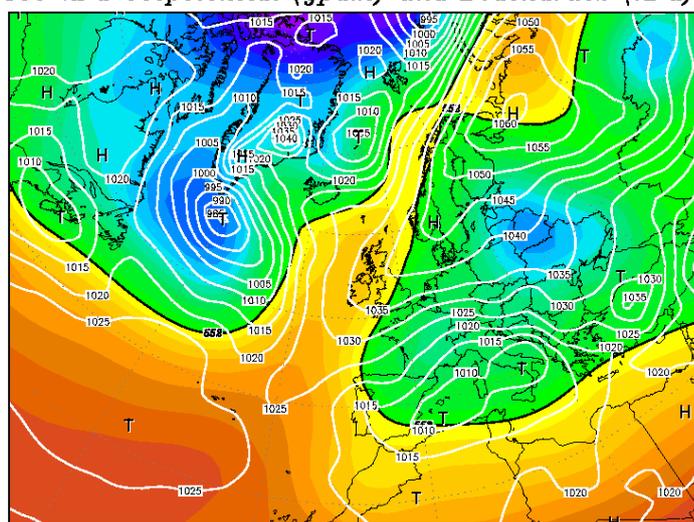
The meteorological chart at 00:00 UTC on 02/02/2012 shows a low pressure system centered on the western Mediterranean, extending from Spain to Balkans, and a snow storm swept Italy in the following hours, as a part of a long lasting series of snow episodes (14 days) caused by Siberian cold air joining moist Atlantic from the west. These episodes caused century records snowfall in most Italian regions.
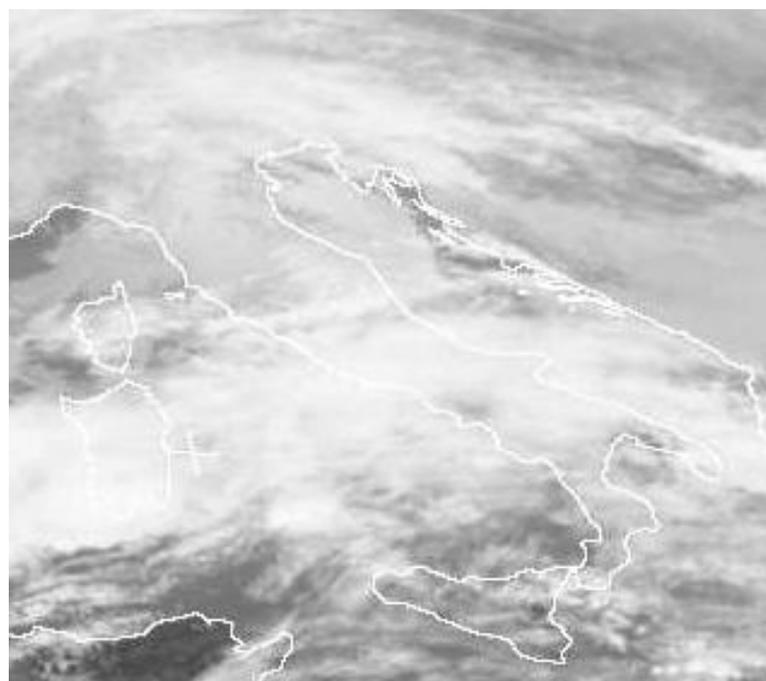
The SEVIRI IR image at 12:00 on Feb the 2nd 2012 shows the Italian region almost completely covered by clouds: low cloud tops in the central/northern part and higher cloud tops on the south. During the early morning heavy snowfall occurred in the Po Valley, while in the afternoon scattered snow episodes took place in central and southern Italy. Light to moderate rainfall was also reported over Sardinia.
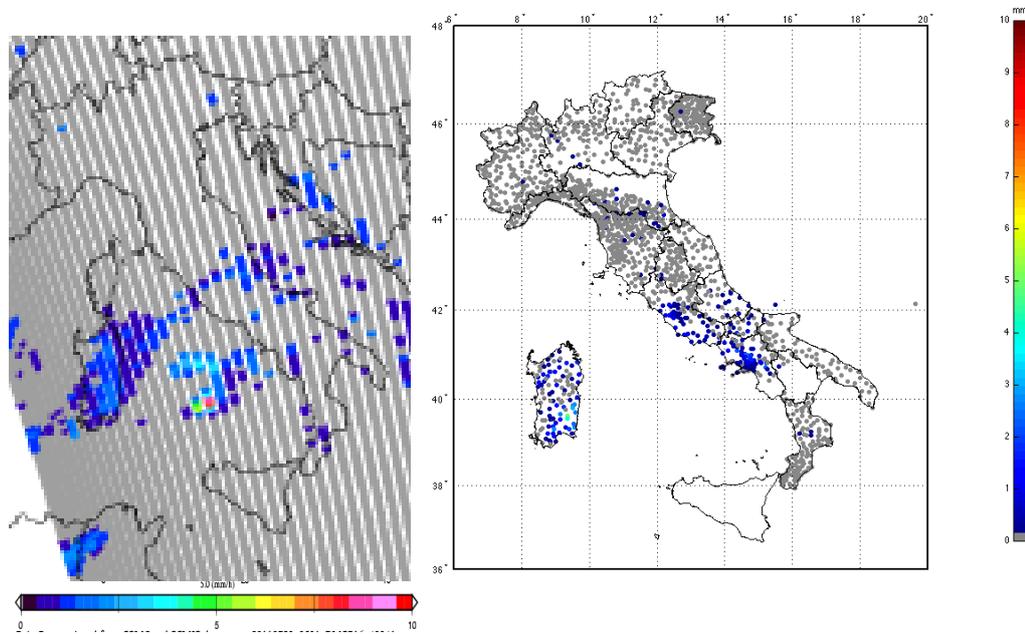
RESULTS OF COMPARISON

Figure. H01 precipitation map at 16:23 UTC (left) and raingauges hourly precipitation cumulated at 17:00 UTC (right) of Feb the 2nd 2012.

The raingauges map (top right panel) shows widespread rain over Sardinia and two snowfall spots over central Italy and Naples area. The h01 estimates (top left) is rather effective in detecting moderate and light precipitation over Sardinia, while other wet areas are detected much less precisely over the Italian Peninsula. There is a substantial mismatch between satellite product and raingauges wet areas, resulting in rather poor statistical indicators: HSS=0.24, ETS=0.21, FAR=0.55 and POD=0.43. However, the relatively high HSS value indicates that, when the wet area is correctly detected, also the precipitation rate is correctly classified.

COMMENTS
This case is challenging for any satellite estimate technique because 1) light rain/snowfall are difficult to detect in microwave and 2) the presence of snow at the ground can be misclassified. As a matter of fact, the screening procedure is effective to remove the snow covered ground signal over northern Italy.

Indications to Developers
The screening algorithm seems to work properly in avoiding misclassification of snow covered background, but the delineation of precipitating areas in case of snowfall has to be improved.