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Nowcasting of cloud cover with MSG

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In this poster, an algorithm is shown to detect water and ice clouds seperately and forecast their developement for the next timesteps. It is based on Meteosat SEVIRI (Spinning Enhanced Visible and Infrared Imager) data from almost all channels with a timestep of 15 minutes. In order to derive cloud cover, optical depth and height of ice clouds the "Cirrus Optical properties derived from CALIOP and SEVIRI during day and night" (COCS) algorithm (Kox 2012) was used. For the determination of water clouds a cloud mask was developed.

For a most accurate forecast the detected clouds are divided into two groups, convective and advective, and afterwards treated seperately. The forecast of advective clouds basically takes place with the pyramidal matcher ("optical flow" technique, Zinner et al. 2008) by determining a motion vector field from two consecutive images. The clouds are then classified as objects with similar properties (optical depth, temperature) and a forecast for each object separately is then performed.

For the detection of convective clouds the tracking and nowcasting algorithm Cb-TRAM (CumulonimBus TRacking And Monitoring, Zinner et al. 2008) is used, which divides convection into three stages. The further development und thus the forecast of these clouds is dependent of the current stage.

Appications to selected case studies will be shown.