MSG cloud mask algorithm validation using data by MODIS Terra and Aqua satellites

R. Bechini (1), R. Cremonini (1), V. Campana (1), L. Tomassone (1), C. Cassardo (2), S. Terzago (2)

(1) ARPA Piemonte - Area Previsione e Monitoraggio Ambientale, Torino, Italy, (2) Department of General Physics "Amedeo Avogadro", University, Torino, Italy (l.tomassone@arpa.piemonte.it / Tel.: +39 011 3169672 / Fax: +39 011 3181709)

Geostationary meteorological satellite Meteosat Second Generation - MSG 1 with high temporal resolution, and the SEVIRI instrument with its 12 spectral channels, can provide a lot of information about cloud type and cover, as well as snow coverage. Piedmont region, in the North-Western part of Italy, has a complex orography that allows different weather conditions, like frequent snowfalls on mountains or dense fog in plans during winter, thunderstorm clouds in summer. A cloud mask algorithm, using as input MSG data and ECMWF model parameters, has been developed by ARPA Piemonte in order to discriminate between cloud cover and clear sky, and to classify cloud types as well, over northwestern Italy area. The aim of this work is the validation of this algorithm by a comparison with MODIS cloud mask (NASA) in several case studies; these are characterized by various acquisition times (daytime and nightime scenes) and by different season (winter, spring, summer scenes).