

ABSTRACT

The thesis is focused on analysis and possible modifications of methods and procedures allowing the determination of various cloud types using the satellite data. Today, the main methods are concentrated around two the most applied international projects, one being developed for the instrument MODIS on board American Terra and Aqua polar satellites, and the other one being developed for the instrument SEVIRI on the European geostationary satellite Meteosat. The algorithms used for automatic discrimination of several cloud types operationally are created on these models. The American program MODIS Atmosphere have been created by NASA and the European program NWC SAF have been developed by organization EUMETSAT.

Content of the thesis is to specify how input parameters influence final result of cloud determination in both models, and how results are depending on the external meteorological and geographical conditions during data acquisition. The effort will be given to identification of main drawbacks at two models and to identify conditions when their respective application is limited, their results different and to make steps towards possible modifications to mitigate the drawbacks. The analysis will use ground data and optimal developed procedure for validation of satellite data processing. The accessible satellite data acquired over Europe by both SEVIRI and MODIS sensor will be use for the study.

Keywords:

Cloud Types, NWC SAF, MODIS Atmosphere, Remote Sensing