

Title *Usage possibilities of the cloud products of satellite datasets*

Author: *Bc. Petr Šácha*

Department: *Department of Meteorology and Environment Protection*

Supervisor: *RNDr. Petr Pišoft Ph.D.*

Supervisor's e-mail address: Petr.Pisoft@mff.cuni.cz

Abstract: Cloudiness plays an important role in the global energy and water cycle. In particular, the presence of clouds dominates the planetary albedo and takes part in many climate feedback processes. In this thesis a short informational overview of remote sensing, a description of EUMETSAT, satellites, which it used, its part CM-SAF and a search retrieval of current research is given at first. Then the study is focused on the cloud satellite products, especially on CFC (cloud fractional cover) and CTY (cloud type) products. Data sets of daily averages of these products are compared with the daily averages created from the surface SYNOP observations of the total cloud cover and cloud type in the area of the Czech Republic. In the case of big variances between the two examined datasets of daily averaged cloud coverage, possible causes like the sampling error, dependence on season, localization of the station and the elevation and type of cloudiness, are searched. Several statistic analyses and validation scores are computed. Finally, possibilities of the examined satellite products are discussed.

Keywords: cloudiness, remote sensing, EUMETSAT, CM-SAF, CFC, CTY