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Application of polar orbiter products in weather forecasting using open source tools and open standards

Maarten Plieger and Ernst de Vreede

Royal Netherlands Meteorological Institute (KNMI), R&D Observations and Data Technology, De Bilt, Netherlands (plieger@knmi.nl)

EUMETSAT disseminates data for a number of polar satellites. At KNMI these data are not fully used for operational weather forecasting mainly because of the irregular coverage and lack of tools for handling these different types of data and products. For weather forecasting there is a lot of interest in the application of products from these polar orbiters. One of the key aspects is the high-resolution of these products, which can complement the information provided by numerical weather forecasts. Another advantage over geostationary satellites is the high coverage at higher latitudes and lack of parallax. Products like the VIIRS day-night band offer many possibilities for this application.

This presentation will describe a project that aims to make available a number of products from polar satellites to the forecasting operation. The goal of the project is to enable easy and timely access to polar orbiter products and enable combined presentations of satellite imagery with model data. The system will be able to generate RGB composites ([U+0093]false colour images[U+0094]) for operational use.

The system will be built using open source components and open standards. Pytroll components are used for data handling, reprojection and derived product generation. For interactive presentation of imagery the browser based ADAGUC WMS viewer component is used. Image generation is done by ADAGUC server components, which provide OGC WMS services. Polar satellite products are stored as true color RGBA data in the NetCDF file format, the satellite swaths are stored as regular grids with their own custom geographical projection. The ADAGUC WMS system is able to reproject, render and combine these data in a webbrowser interactively.

Results and lessons learned will be presented at the conference.