



Weather forecasting with open source software

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To forecast the weather situation during aircraft-based atmospheric field campaigns, we employ a tool chain of existing and self-developed open source software tools and open standards. Of particular value are the Python programming language with its extension libraries NumPy, SciPy, PyQt4, Matplotlib and the basemap toolkit, the NetCDF standard with the Climate and Forecast (CF) Metadata conventions, and the Open Geospatial Consortium Web Map Service standard. These open source libraries and open standards helped to implement the “Mission Support System”, a Web Map Service based tool to support weather forecasting and flight planning during field campaigns. The tool has been implemented in Python and has also been released as open source (Rautenhaus et al., Geosci. Model Dev., 5, 55-71, 2012). In this presentation we discuss the usage of free and open source software for weather forecasting in the context of research flight planning, and highlight how the field campaign work benefits from using open source tools and open standards.