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The odds, strengths and weaknesses in reanalysis products from the viewpoint of climate science and services: A website questionnaire survey

K. Jylhä and H. Gregow

Finnish Meteorological Institute, Helsinki, Finland (kirsti.jylha@fmi.fi)

Atmospheric science researchers commonly utilize weather station data or gridded data sets constructed from in-situ observations but reanalyses are becoming increasingly popular to use. Within the EU FP7 CORE-CLIMAX (Coordinating earth observation data validation for RE-analysis for CLIMAte ServiceS) project, we will implement an online questionnaire about the attitudes and requirements of the scientific community on reanalysis.

A previous user survey, conducted in 2004-2005 by ECMWF, focused on the ERA-40 reanalysis alone. That survey revealed needs for improvements in resolution and for time series that are regularly extended to the present. It also revealed that there are relatively few users of the data in Africa and Latin America, and among researchers on ecosystems and biodiversity. Our aim is to obtain measures for comparing the strengths and weaknesses in a larger number of global and regional reanalyses that are being produced. We also plan to address issues related to the assimilation of in-situ and satellite input observations. Differences in their temporal resolution, inconsistencies in accuracies between sensors, and difficulties in merging the input data into credible climate data records all affect the quality of reanalysis products.

A pilot survey is currently being carried out by personally interviewing a number of researchers that already now work with reanalysis products or could potentially utilize them in their topics related to, e.g., SW and LW radiation, sub-daily precipitation, or more generally, climate change, atmospheric boundary layer, troposphere and stratosphere, oceans, arctic areas, or development of better climate services. After this pilot phase, the web portal enquiry will be linked to the CORE-CLIMAX webpage. It will also be distributed to reanalysis users and developers that benefit from the website reanalyses.org. Requirements on the quality and applicability of the data and the uncertainties addressed by the participants in the survey will thereafter be analyzed.