Sustained and coordinated processing of Environmental Satellite data for Climate Monitoring

RO-CLIM Project Plan and Progress Report

Note: Format, main outline is based on the Letter of Intent

1. Project title:

"Radio occultation based gridded climate data sets - RO-CLIM"

2. Main applicant[1]:

Name: Hans Gleisner
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3. Composition of the project team for this project:

Name and title	Institute	Address
K. Lauritsen, S. Syndergaard	ROM SAF / DMI	Danish Meteorological Institute, Copenhagen, Denmark
S. Healy	ECMWF	European Centre for Medium Range Weather Forecasts, Reading, UK
C. Marquardt, R.A. Roebeling, A. von Engeln	EUMETSAT	EUMETSAT, Eumetsat Allee 1, Darmstadt, Germany
T. Schmidt, J. Wickert	GFZ	GeoForschungsZentrum, Helmholtz Centre Potsdam, Germany
C. Ao, T. Mannucci	JPL	Jet Propulsion Laboratory/NASA, Pasadena, California, US
M. Ringer	Met Office	Met Office, Exeter, UK
R. Kursinski	Moog	Moog Broad Reach, Boulder, USA
B. Schreiner, S.-P. Ho, D. Hunt	UCAR	COSMIC Program Office, University Corporation for Atmospheric Research, Boulder, Colorado, USA
A. Steiner, U. Foelsche, G. Kirchengast	WEGC	Wegener Center for Climate and Global Change, University of Graz, Graz, Austria

4. Purpose of the Document

This document collects the within the team agreed annual project plan steps and (once applicable), the progress reports of the RO-CLIM project. The overall aim of the 5 year RO-CLIM project is presented in the RO-CLIM Project Description [RO-CLIM PD]. Within this document the annual steps on the intended areas of activity for a particular year are summarized, and, after each year a short progress report is added. This progress report is then also used for reporting to the SCOPE-CM Executive Panel (SEP).

[1] The project lead of RO-CLIM was shifted from Axel von Engeln, EUMETSAT to Hans Gleisner, EUMETSAT ROM SAF / DMI on 24. March 2014.

5. Annual Project Plans

a. 2014

The following development steps are foreseen for the 1st year, the lead institute/scientist is given in brackets:

- Increase maturity level of CHAMP ROTrends data set by:
  - re-assess implemented processing software at center, in particular with respect to the initialization of bending angles at higher altitudes, re-process data set if required, investigate outlier statistics (all centres);
  - cross-check data set against radio occultation data from more recent missions that overlap with CHAMP, such as COSMIC, GRACE, GRAS (WEGC);
  - provide information on the structural uncertainty of the CHAMP data set in form of tables (Andrea Steiner);
  - generate an ensemble of products, i.e. RO data are provided by each centre, including uncertainty information (representative of each centre);
  - generate a re-analysis based data set that uses the same processing and gridding setup as the instrument one, using e.g. ERA-Interim data or ERA-CLIM if available (Sean Healy, Axel von Engeln, Hans Gleisner);
  - improve documentation of data set (representative of each centre);
  - make information publicly available through http://www.scope-cm.org, pointing to a dedicated project page at http://www.irowg.org which includes links to the individual centres. The download data will be hosted at http://www.romsaf.org. (Andrea Steiner, Ben Ho, Hans Gleisner, Axel von Engeln).

- Start the generation of the extended ROTrends data set that includes more recent missions and will be updated throughout the project:
  - develop a common Level 1A format that can be used across the different centers (Christian Marquardt, Doug Hunt, DMI, representative of each centre);
  - develop capability at the different centers to ingest this format into their processing (representative of each centre).

6. Annual Progress Reports

a. 2014

Will be provided early 2015.

7. References:

[RO-CLIM PD] SCOPE-CM RO-CLIM Project Plan, EUM/RSP/DOC/13/701839, available at http://www.scope-cm.org.