Ice_Sheets_CCI: Essential Climate Variables for the Greenland Ice Sheet

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As part of the ESA Climate Change Initiative (www.esa-cci.org) a long-term project "ice_sheets_cci" started January 1, 2012, in addition to the existing 11 projects already generating Essential Climate Variables (ECV) for the Global Climate Observing System (GCOS). The "ice_sheets_cci" goal is to generate a consistent, long-term and timely set of key climate parameters for the Greenland ice sheet, to maximize the impact of European satellite data on climate research, from missions such as ERS, Envisat and the future Sentinel satellites.

The climate parameters to be provided, at first in a research context, and in the longer perspective by a routine production system, would be grids of Greenland ice sheet elevation changes from radar altimetry, ice velocity from repeat-pass SAR data, as well as time series of marine-terminating glacier calving front locations and grounding lines for floating-front glaciers.

The ice_sheets_cci project will involve a broad interaction of the relevant cryosphere and climate communities, first through user consultations and specifications, and later in 2012 optional participation in "best" algorithm selection activities, where prototype climate parameter variables for selected regions and time frames will be produced and validated using an objective set of criteria ("Round-Robin intercomparison"). This comparative algorithm selection activity will be completely open, and we invite all interested scientific groups with relevant experience to participate. The results of the "Round Robin" exercise will form the algorithmic basis for the future ECV production system. First prototype results will be generated and validated by early 2014. The poster will show the planned outline of the project and some early prototype results.