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24 years of C3S Arctic regional reanalysis

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The Copernicus Climate Change Service (C3S) regional reanalysis for the Arctic consists of two datasets of Essential Climate Variables (ECVs) for the 24 year period from 1997 to 2021. The high resolution (2.5x2.5 km²) datasets cover Greenland, Iceland, Svalbard, the Barents Sea and Northern Scandinavia. Several islands in the Russian Arctic and a few islands in the Canadian Arctic are also covered. The produced datasets are freely available to all. A first subset of the data has been published on the Copernicus Data Store (CDS) in early 2021.

The reanalysis is performed with state-of-the-art data assimilation techniques that include many local quality-controlled observations that have not been included in previously published reanalysis datasets. The weather forecasting model HARMONIE-AROME cy40h1.1.1 has been used to produce the dataset. The model computations have additionally been optimized for processes essential in the Arctic. Estimated uncertainty data have been produced at atmospheric pressure levels, and validation statistics have been made for synoptic weather stations.