
The Copernicus Arctic Regional Reanalysis

Harald Schyberg*¹

¹Norwegian Meteorological Institute – P.O. box 43 Blindern, 0313 Oslo, Norway

Abstract

The Copernicus Climate Change Service (C3S) is now implementing an Arctic climate reanalysis. ECMWF organizes this service on behalf of the European Commission, and the work is led by MET Norway with the other Nordic and the French national meteorological services as partners. Due to Arctic climate warming on average faster than the rest of the globe, there is enhanced user focus on change processes in this area. The Copernicus Arctic Regional Reanalysis service (where the data set is abbreviated as CARRA) produces its regional reanalysis on two Arctic subdomains of interest for change processes and economic activities. The production is ongoing and the reanalysis covers the period 1991 - 2021 with a horizontal resolution of 2,5 km. Recently the first batch of the data covering the period 1998-2019 was made publicly available. Additionally a proof-of-concept for a next generation pan-Arctic reanalysis system will be provided for the period September 2017 - September 2018, to cover part of the Year of Polar Prediction.

In this presentation we will focus on how the data set verifies and compares to other data sets. We demonstrate how the Arctic reanalysis adds value versus the global reanalysis ERA5 both statistically and for special weather events. This value adding is obtained both by using a higher-resolution model and by using fine scale regional input data not used in the global system. (A companion presentation by Xiaohua Yang provides more detail on the development and the performance of the assimilation system.)

Keywords: Reanalysis, Arctic

*Speaker