



## **ClimNorm - a spatio-temporal approach to support the calculation of new standards climatological normal in the Nordic region.**

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Climate normals are defined by WMO (WMO, 2018) as 30-year representative averages of climate variables referring to the most recent 30-year period finishing in a year ending with 0. This definition replace the previous definition of consecutive non-overlapping 30 year periods (1901-30, 1931-60, 1961-90 and the upcoming 1991-2020).

Calculation of the climate normals is, given that the input data series are complete and of good quality, a straightforward procedure. But the reality is that many series are incomplete and/or inhomogeneous. Since the normals are sensitive to the averaging period, efforts have to be done to secure a robust and consistent basis for calculations of climate normals.

In all Nordic countries the observation network has been drastically changed over the last 15-30 years. This has caused challenges for the calculation of climate reference values (the normals) as they require complete and preferably homogenous data series. To be able to calculate representative climate normals efforts has to be taken to (i) fill in gaps in incomplete data series and (ii) assess and adjust for inhomogeneous and inconsistent data series.

The Nordic region is characterized by large variations and gradients in weather and climate caused by different topographical and coastal influences. The area along the national borders is sparsely covered by meteorological stations, and data exchange across these borders will provide a better data basis for calculation of stations normals in the region. The climate services in the Nordic countries has a long and profound history of collaboration within in climatology. Organized under the Nordic Framework for Climate Services (NFCS) ClimNorm will be a continuation of this tradition, focusing on establishing a high quality homogenized reference data set, evaluating gap filling methods and assessing spatial and temporal trends and variability, producing a Nordic climate atlas for the 1991-2020 normal period.