Topics (T)
Interactive Presentations (IP)

Author: Mr. Thomas Lavergne
Norwegian Meteorological Institute, Norway, thomas.lavergne@met.no

A NEW STRUCTURE FOR THE SEA ICE ESSENTIAL CLIMATE VARIABLES OF THE GLOBAL CLIMATE OBSERVING SYSTEM

Abstract

Climate observations inform about the past and present state of the climate system. They underpin climate science, feed into policies for adaptation and mitigation, and increase awareness of the impacts of climate change. The Global Climate Observing System (GCOS), a body of the World Meteorological Organization (WMO), assesses the maturity of the required observing system and gives guidance for its development. The Essential Climate Variables (ECVs) are central to GCOS mission, and the global community must monitor them with the highest standards in the form of Climate Data Records (CDR).

Today, a single ECV — the sea ice ECV — encapsulates all aspects of the sea ice environment. In the early 1990s it was a single variable (sea ice concentration) but it later became an umbrella for four variables (in 2011) and now seven variables (in 2022): sea ice concentration, thickness, snow depth, surface temperature, surface albedo, age, and drift

In this contribution, we introduce those seven variables, their existing and future observing capabilities, and some of their remaining challenges. We also describe why the current single-ECV approach is an impediment to the development of state-of-the-art data records. We finally invite the sea ice community to reflect on these challenges and contribute to better observations of the sea ice ECV.