

Challenges in observation and modelling of Arctic climate change

Stein Sandven (NERSC)

It is a major challenge to develop an integrated Arctic Observation System that is required to understand and predict the changes in the Arctic climate system. There are numerous ongoing efforts to extend and improve existing systems in the different regions of the Arctic. Satellite earth observation data plays an increasingly important role in such observing system, because the amount of EO data for observing the global climate and environment grows year by year. In situ observing systems are much more limited due to logistical constraints and cost limitations. The sparseness of in situ data is therefore the largest gap in the overall observing system.. The development of a sustainable Arctic observing system requires coordination, mobilization and cooperation between the existing European and international infrastructures (in-situ and remote including space-based) the modelling communities and relevant stakeholder groups. An integrated Arctic Observation System will enable better-informed decisions and better-documented processes within key sectors (e.g. local communities, shipping, tourism, fishing), in order to strengthen the societal and economic role of the Arctic region and support the EU strategy for the Arctic and related maritime and environmental policies.