Session Title	**Sustainable Development of the Earth's Cold under a warming**
Session Description	Climate change is now rapidly transforming the Earth's cold regions, exacerbating the vulnerability of ecosystems and altering the societal operations and governance within affected communities. The impacts are not only reshaping the Cryosphere and its surrounding and downstream areas, but also affecting key Societal Benefits Areas (SBAs) such as water availability in downstream regions, transportation through the harsh regions, infrastructure stability in permafrost areas, induced disasters, and agriculture due to lowland ecosystem changes. The operations for the cold regions' sustainable developments have posed a big challenge due to the insufficient observations and agile monitoring of the Cryospheric elements, a lack of adequate data and tools, and limited or neglected information services. Timely and effective Cryospheric and environmental monitoring and comprehensive value-added data linked with society and economic development are urgently needed for decision-making. In this session, the valued dataset for these areas of Societal, environmental, and economic domains will be discussed from the space earth observations and other data sources, including the existing highly valued datasets, and potential methodologies for the information extraction of the operations of Earth's cold region from space observations, even from sew sensors, emergying articifcial intelligence, and the requirement analysis of the data utilities for a sustainable development assessment and digtial goverance in Earth's cold regions. The session will be calling for speakers in communities of EO technology, Data Science, Sustainable development, and Policy and governance.