

Climatology of the high-latitude planetary boundary layer

*5th CRAICC-PEEX workshop
28 – 30 September 2015
Nansen Environmental and Remote Sensing Centre
Bergen, Norway*

The enhanced warming of the high latitudes leads to influential changes in our immediate environment. Among those changes are: sea ice retreat; circumpolar greening of arctic biomes; permafrost thaw; changes in cloudiness, precipitation and storminess; and other changes at the air-land-sea interface. These changes shift the surface energy balance and modulate the turbulent processes in the planetary boundary layer, which are responsible for a wide diversity of regional climate responses.

The workshop grand challenge is to create a consistent understanding of the physical mechanisms, their parameterizations and their climatology for climate change projections in the high latitudes.

This challenge will be addressed by four workshop sessions:

- The **boundary layer processes** session will discuss the processes at the interface of the hydrosphere, the atmosphere, the cryosphere, and the biosphere, with references to the land cover and the global weather patterns.
- The **turbulence modeling** session will discuss the turbulence parameterizations, their impact on the model simulations, and the interaction between turbulence and other physical processes in high latitude boundary layers.
- The **boundary layer climatology** session will discuss the role of the boundary layer processes in the high latitude climate, climate change, and the diversity of regional climate responses to natural and anthropogenic drivers.
- The **human interaction with our immediate environment** session will discuss the societal problems connected to the changes in the high-latitude planetary boundary layers. Those problems include, but are not limited to: urban heat pollution; changes in the emission, transport and transformation of air admixtures; interactions between the land use and permafrost etc.
 - In the framework of this session, there will be a lecture on innovative climate change communication and co-production of climate knowledge with society.

Participation in the workshop is **FREE**

Deadline for the abstract submission is **August 31st 2015**

The papers from the workshop will be published in a special issue of ***Advances in Meteorology***.

All submissions and inquiries should be sent to igor.ezau@nersc.no