Proposal 14
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IPY research themes proposed by the Danish Meteorological Institute (DMI).
It is noted that all these themes comply with the main IPY themes including
- Research (new knowledge)
- Polar change

Improved understanding of polar processes
The proposed research themes deal with geophysical research themes only, but it is important to note, that all the themes have a direct and strong impact – and interacts – with other areas of research, including biological/ecological, political and social sciences. It will therefore be easy to integrate the research into somewhat larger interdisciplinary research themes.
It is generally suggested that the Danish activities within the proposed areas focus to the largest possible extent on Greenland. Thus, atmospheric measurement components (including those in the upper atmosphere) should be performed at the existing Greenland stations (lidar, ozone, radar, etc).
For most of the suggested research the main focus is naturally on Greenland and the Arctic region, but some themes are also directly related to the Antarctic region.
It is noted that the list is in non-prioritised order.

“Space Weather”
Space weather refers to conditions in geospace which are controlled by solar activity and which can have impact on cultural and technical aspects of societal life. The most efficient coupling between the active Sun and the Earth occurs at very high magnetic latitudes which coincide with Artic and Antarctic regions. Intense geomagnetic variations and auroral displays are examples of high-latitude manifestations of solar activity. High-altitude air traffic, radio communication and electric power lines and pipelines are vulnerable to space weather effects particularly at high latitudes.
Sun-Earth interaction is a global phenomenon and space weather is consequently international. Continuous data acquisition, processing, analysis and exchange around the world is necessary in order to be able to provide timely space weather reports and forecasts at any given time.
International coordination and cooperation is therefore essential, but up to now not much developed. This should be a task for the IPY.