

Proposal 16

Submitted by:

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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.

AO / NAO

The Arctic/North Atlantic Oscillation is the dominating atmospheric pressure

anomaly pattern in the arctic. The arctic oscillation (AO) manifests itself as variations in almost all atmospheric (including the stratosphere) parameters such as wind conditions, temperature, precipitation, clouds and radiation, and even in several oceanic parameters. These variations are especially strong and clear in Greenland and Europe. Therefore a better

understanding of the mechanisms behind short as well as long term variations in AO should be included in the IPY research. This also regards theoretical as well as modelling studies on the possibilities for predicting AO.