

Statement of DMI about the Antarctic RCC Network

Motivation:

Denmark is a country with low elevation and long coasts and is therefore vulnerable to **sea level rise**. Melting of the ice sheet in Antarctica has a large contribution to the rise of the sea level. Therefore DMI is interested in Antarctica, especially in the surface mass balance, ice sheet melt and their projections. DMI is also active in **remote sensing** of sea ice and the ocean and would like to contribute with its **expertise**. Denmark has also several other **active research** projects ongoing in Antarctica and hence is an obvious partner in the AntRCC.

Needs:

DMI is conducting regional climate simulations for Antarctica and would for this like to draw on the AntRCC in terms of **evaluation of the climate models**. This could include climate diagnostics, a historical reference climatology and a Regional Climate Watch. Besides that, DMI is mostly interested in getting closer **collaborations** with other AntRCC partners concerning regional climate and ice sheet modelling.

DMI also produces **remote sensing** products about sea ice and SST. In order to evaluate and improve these products and algorithms, DMI wants to utilize the AntRCC-Network to **collaborate** more closely with partners.

Furthermore, our partners at the Niels Bohr Institute might be glad about support of their ice core drilling project.

Contributions:

DMI does not have additional funding in order to extend its Antarctic activities, but it can contribute to AntRCC with its existing products and activities. These include:

- 1) Sea ice information products from remote sensing, which are available through OSI-SAF
- 2) Regional model simulations and projections of the climate and the surface mass balance
- 3) Ice sheet simulations (in development)

Furthermore, DMI can contribute with its experience from the ArcticRCC.

Interests:

In general, DMI is very interested in interacting with the AntRCC. Until now, climate simulations for Antarctica are very uncertain and we would like to tackle this problem in cooperation with other partners. One reason for discrepancies between the model results is that different models use different definitions of Antarctica's ice sheet area and topography. AntRCC could motivate partners to define one **common ice sheet area and topography dataset**, so that model results can be compared more easily. Additionally, **more in-situ observations** of surface mass balance would be needed to validate climate models more accurately. In order to assess the impact of changes of the ice sheet on the global climate, DMI is interested in research about **processes in the Southern Ocean** and the interaction of the ice sheet with the ocean in Global Climate Models. Finally, Denmark could benefit from recommendations by the AntRCC about **climate adaptation strategies**, especially concerning sea level rise.