

# GRENE-北極気候変動研究プロジェクトの活動状況

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## Activity of GRENE-Arctic Climate Change Research Project

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New Arctic Climate Change Research project “Rapid Change of the Arctic Climate System and its Global Influences” started in 2011. This project is a new initiative of Arctic study as the flame work of GRENE (Green Network of Excellence) of MEXT (Ministry of Education, Culture, Sports, Science and Technology, Japan), involving about 300 scientist from 35 Japanese universities and institutes.

This GRENE Arctic project set four strategic research objects:

- Understanding the mechanism of warming amplification in the Arctic
- Understanding the Arctic system for global climate and future change
- Evaluation of the effects of Arctic change on weather in Japan, marine ecosystems and fisheries
- Prediction of sea Ice distribution and Arctic sea routes

The Project is funded for 5 years starting in 2011 and jointly managed by the National Institute of Polar Research (NIPR) and JAMSTEC. This GRENE-Arctic project approaches Arctic climate system from multi-disciplinary direction, and tries to integrate the results to the focal point of strategic research objects. Data archiving efforts in the project further enhance this close relationship between model and observational studies. Model results help to interpret observations while observations are used to constrain models and validate model outputs. Japan Consortium for Arctic Environmental Research (JCAR) is founded to Arctic research activities willing to enhance discussions within Japan and connect international relationships.

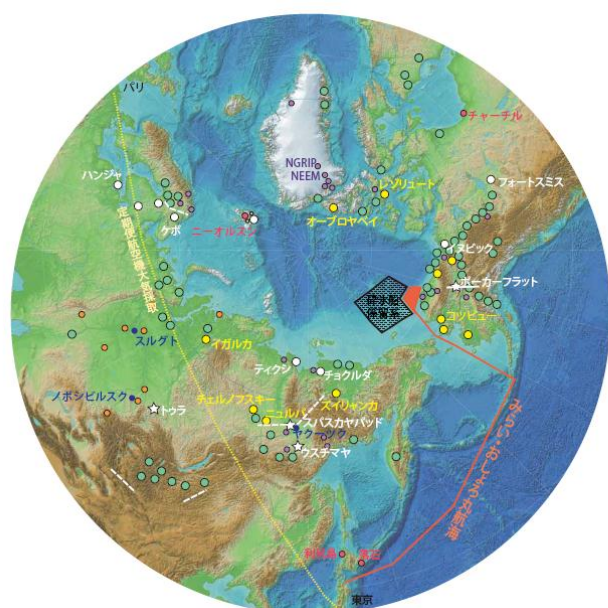
Project brochure are available at :

<http://www.nipr.ac.jp/grene/pamphlet.html>

The study of GRENE-Arctic project has started in October 2011, and many field campaigns were carried out in the Arctic in 2012 summer season. The field reports are available at:

<http://www.nipr.ac.jp/grene/kansokudayori/index.html>

Field data are obtained during the field campaigns and autonomous sensing equipment are installed at observation field (Figure 1) . The data is accumulating in the Arctic Data archive System (ADS).



GRENE 北極気候変動研究事業  
観測地点地図 (候補地含む)

現在の北極気候変動研究では積雪や凍土、土壌と植生の変化、熱や水の循環、温室効果気体の変化、海氷減少の実態などの観測に偏りがあります。

GRENE 北極気候変動研究事業では、今まで観測データがなかった地域での観測や同一手法による複数年に渡る継続的な観測等を行います。

北極域に国土を持たない日本だからこそできる広域多目的観測。陸・海・空の様々な場面が研究対象となり、国際的にも注目を浴びています。

### 【凡例】

- ☆ スーパーサイト (植生、積雪、凍土、温室効果気体等)
- 準スーパーサイト (同上)
- 移動型集中観測地点 (凍土監視)
- 自動広域観測地点 (凍土監視)
- タワー観測 (温室効果気体定点観測)
- 小型航空機観測地点 (大気試料採取)
- 地上観測基地 (温室効果気体連続測定)
- 氷床掘削・フィルンエア採取・積雪調査
- 白点線 広域積雪観測トランセクト

Figure 1. Observation area of the GRENE Arctic Climate Change Research Project. The data is archived in the Arctic Data archiving System (ADS) and utilized for observation-modeling collaborating study.