

## **KOPRI Outline of Development of the Amundsen / Bellingshausen Seas Coastal Dome Science**

The KOPRI Climate change mechanism project (PI. Sungjoong Kim) has operated two AWS at Lindsey Island and Moore Dome, Amundsen Sea since 2008 and 2011, respectively. Along with this meteorological monitoring, we have conducted snowpit study on Moore Dome at Bear Peninsula as a potential KOPRI ice coring site at Amundsen Sea regions. In this season, we will conduct snowpit study and surface coring at Moore Dome.

The KOPRI Amundsen sea cruise project (PI. SangHoon Lee) has conducted two field expeditions during 2010 to 2014 and will conduct 3<sup>rd</sup> field expedition for this 2015-2016 season. The ultimate goal of the Amundsen Sea project is to assess the warming trends and physical mechanisms of the temperature rise in the study area, as well as the chemical, biological, and biogeochemical consequences of the rapid warming in the western Antarctic.

We will perform the analysis of trace elements including REEs and PGEs to elucidate the relative strength of natural and anthropogenic impact affecting the changes in their atmospheric cycles. In addition, we will test the light-absorbing impurities such as mineral dust or organic materials which are known to decrease the albedo of the snow. The analysis of trace elements and snow impurities help to solve the difference of Atmospheric circulation in West and East Antarctica. We hypothesize the amount of impurities in snow has been linked not only to decrease the recent surface mass balance but also to changes in the Atmospheric circulation.

The KOPRI can support two ice corers, one shallow drill (upto 270 m) manufactured by Geo Tecs, Japan and the other intermediate drill (upto 600 m) manufactured by LGGE, France. KOPRI research icebreaker, Araon can support logistics for the West Antarctic cruise which planned every two years.

We will continue to reinforce the projects with international components for further science collaboration.

The Amundsen / Bellingshausen Seas Coastal Dome Workshop Participants,  
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