Antarctic Winter Maximum and Arctic Summer Minimum in Sea Ice
- Discussions on Their Evidences and Influences -

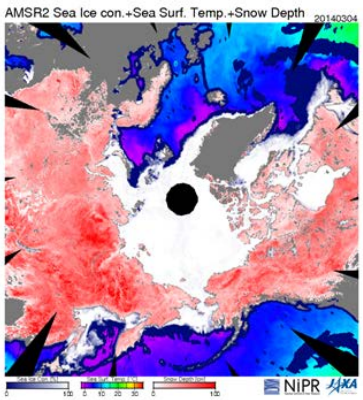
Hiroyuki Enomoto[1,2], Takeshi Tamura[1,2], Masahiro Hori[3], Takashi Yamanouchi[1,2], Naohiko Hirasawa[1,2] and Hironori Yabuki[1,4]

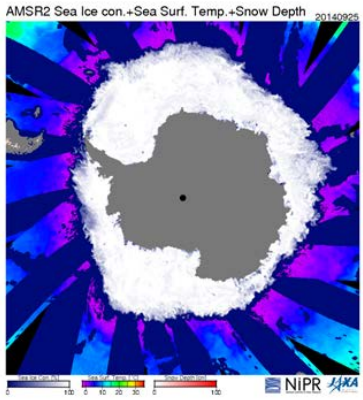
[1]*National Institute of Polar Research*
[2]*The Gradute University for Advanced Studies*
[3] *Japan Aerospace Exploration Agency*
[4] *Japan Agency of Marine-Earth Science and Technology*

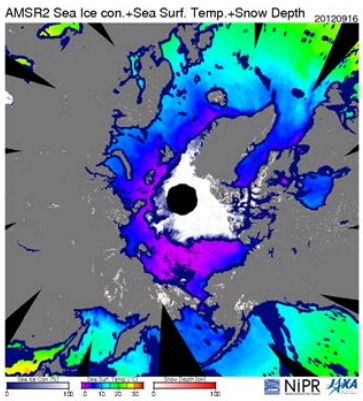
Arctic sea ice declining rapidly in 2000s with the summer minimum record in 2012. Sea ice in 2013 and 2014 summers rcorded increase however the stiation is stll low expand level. On the other hand Antarctic sea ice incresing in the winter maiximum season. Sea ice in the Antarctic in 2014 austral winter recorded the maximum area since the satellite observation became available. There are many discussions on the polar sea ice conditions, and we need to summaraize common feature and differences in these evidences, possible causes and projected future.
They are,

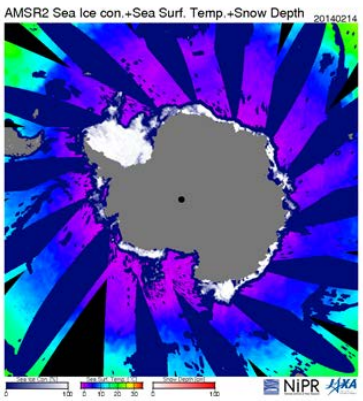
- changes in polar region
- phenomena in sea ice among many cryospheric and polar components
- decreasing or increasing in sea ice
- Arctic or Antarctic
- Summer or Winter

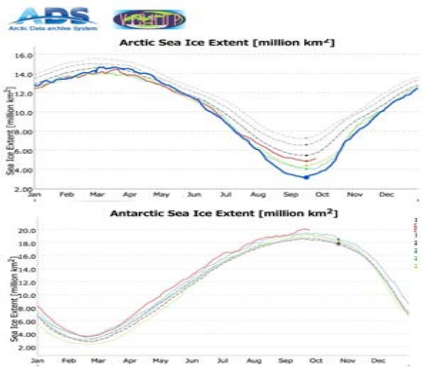
The discussion requires to expand to all seasons, connection to the lower latitudes, possible causes and influences.
And the discussion on the research technology, logistics are also important.
The climate is changing, new evidences in nature are increasing, usually exceeding the researchers efforts.The discussion will be complicated and huge, however the presentaion try to briefly review and list up evidences, expected causes, possible influences, available infrafrastructure for Japanese polar researchers, international cooperations.











Arctic and Antarctic sea ice extent, in winter and summer:

Arctic sea ice record minimum in summer 2012
Antarctic sea ice record maximum in winter 2014

Data: JAXA
Visualizing: ADS