

Measurements of Meteorological Variables at Lindsey Island, Amundsen Sea, West Antarctica

Taejin Choi*, Kyung Ho Chung and Bang Yong Lee

*Korean Polar Research Institute

Researches on warming on the Antarctic are important for the study of global warming. Based on satellite observations, the warming on West Antarctica seems to be pronounced. Lacks of ground based measurements in West Antarctic, however, limit better understanding of the climate change processes on the Antarctic as well as in West Antarctica. Korea has been searching for a candidate site for the construction of its 2nd Antarctic research station to extend its research region from the King Sejong Station in King George Island, the Antarctic Peninsula to other parts of the Antarctic Continent and to contribute to international efforts to understand global environmental change. Amundsen Sea region was considered one of such candidate sites due to the recommendation by COMNAP members. Akademik Fedorov, a Russian ice breaking R/V was used to explore the area with other candidate sites from Jan. 9 to Feb. 20, 2008. An automatic weather station (AWS) was established at Lindsey Island (73°36.072' S, 103°01.253' W), ~ 500 m away from Canisteo Peninsula on February 13 during the exploration. Wind speed, direction, air temperature and relative humidity are measured at two levels (2 and 5 m). Downward and reflected solar radiations are measured at the height of 5 m. In addition, air pressure and snow height are measured. Batteries, charged by two solar panels are used to operate the AWS. One and two-hourly averaged data are stored at a data logger. An Argos Satellite transmitter is used to transmit two-hourly averaged data, which are used to monitor the meteorology around the Island and diagnose the AWS for next visit. Based on the preliminary results on two-hourly basis (mid Feb-mid May), easterly wind from Canisteo Peninsula was dominant (> 50 % of the total frequency) and wind speed was also stronger in that direction with a maximum of 25.8 ms⁻¹. Air temperature ranged from -21.9 (mid May) to 2.6°C (early March) and was lower when the wind blew from the west to the south. More details on the measurements and preliminary results will be presented at the workshop. (Acknowledgements: This study was supported by PM07040 Project. This study was also partly supported by PE08030 and PE08101 Projects of the Korea Polar Research Institute.