

Long-term field experiment for detection and study of climatological change in East Antarctica

*Naohiko Hirasawa¹, Teruo Aoki², Masahiko Hayashi³, Koji Fujita⁴, Yoshinori Iizuka⁵, Naoyuki Kurita⁴, Hideaki Motoyama¹, Takashi Yamanouchi¹, Tetsuo Sueyoshi¹

1. National Institute of Polar Research, 2. Okayama University, 3. Fukuoka University, 4. Nagoya University, 5. Hokkaido University

This presentation will make a review on the Antarctic climatic change during the last decades and discuss important observation to understand the mechanism of the present situation of Antarctica and the future trajectory.

The observation indicates robust warming of West Antarctica since the middle of the last century as one of the most rapid warming area among the world. In East Antarctica, on the other hand, we have not detected clear temporal tendency in the surface air temperature. The mechanism of the suppression of surface warming of East Antarctica has not been understood yet.

Mass balance of the Antarctic ice-sheet also is one the most important issue because it is the largest source to push the sea level upward. While West Antarctica continues to loss the mass, Droning Maud Land, the western part of East Antarctica, recently, got much accumulation, resulting in increasing the mass of the area. The accumulation may be caused by activity of synoptic-scale disturbances. But the mechanism is still studied and we do not know the future trajectory of the mass balance of Antarctica.

To understand the air temperature change and the surface mass balance in East Antarctica, we need to enhance the observations on the ice-sheet and to keep them for more than ten years, favorably. Thus, we are planning a long-turm field experiment for detection and study of climatological change in East Antarctica.

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