

# Revision of Master Plan Proposal ‘Frontier of Polar Science’ - Study on Global Environmental Change through Development of the Antarctic and Arctic Observations -

\*Takuji Nakamura<sup>1</sup>, Atsuko Sugimoto<sup>2</sup>, Shin Sugiyama<sup>3</sup>, Yoshifumi Nogi<sup>1</sup>, Tetsuo Sueyoshi<sup>1</sup>

1. National Institute of Polar Research, 2. Faculty of Environmental Earth Science, Hokkaido University, 3. Institute of Low Temperature Science, Hokkaido University

Our proposal for the Master Plan 2017 of large scale research projects by Science Council of Japan is to install a platform in the polar region in order to contribute to the understanding the global environmental change by providing invaluable information from the Antarctic and the Arctic region. This proposal was discussed by a joint IASC and SCAR working group in Science Council of Japan, and submitted by National Institute of Polar Research. This paper presents the background, the outline of the proposal and the revision for Master Plan 2020.

The global environmental change attains great interest by the governments and general public, as well as scientists on the earth and planets. The Arctic and the Antarctic regions significantly affect global environment and also provide invaluable information on its variation. In the Arctic region, for example, temperature increase due to the global warming is the largest on the globe. The climate change is most significantly emerging which causes change of ecology, human economic activity and life. On the other hand, very little is known on the response of the huge Antarctic ice sheet to the global warming, and hence a possible change in Antarctica on a global scale and its prediction are of greatest interest. Variations in the polar regions are not independent but teleconnected through ocean and atmospheric circulations, and therefore it is necessary to consider them to be one unified system. Moreover, the Arctic and Antarctic regions are the best observation and/or investigation field for space/planetary sciences, atmospheric/hydrospheric sciences, and solid earth sciences, indicating that the polar regions are important windows for earth and planetary sciences.

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