

Summary of the 3rd Year Activities of the Project on the Interaction of the solid Earth and the Antarctic Ice Sheet

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A five years research project funded by JSPS (Japan Society for the Promotion of Science) has been started in July 2017. The title of the project is "Giant reservoirs of heat/water/material: Global environmental changes driven by Southern Ocean and Antarctic Ice Sheet" and is aiming to establish a new research area for Antarctic environmental system science. The project consists of 7 research topics, including Antarctic ice sheet and Southern ocean sciences, new observation methodology, modeling and other interdisciplinary topics, and we are involved in the topic, "Interaction of the solid Earth and the Antarctic Ice Sheet".

The Antarctic ice sheet is an essential element of the Earth system for predicting the future environment changes. Thus many studies have been conducted by means of geomorphological, geological, geodetic surveys, as well as satellite observations. For these studies, one of the largest uncertainties is the effects of GIA and the main reason of the uncertainties come from insufficient in-site observations. Thus we planned to conduct geomorphological, geological and geodetic surveys in the outcrop areas and the coastal areas in East Antarctica. Combining these new observations with other in-site data, various satellite data and numerical modeling, we aim to estimating a precise GIA model, constructing a reliable ice melting history after the last glacial maximum and obtaining the viscoelastic structure of the Earth's interior.

As the third year activities, we conducted absolute gravity measurements in Korean Jang Bogo station and Itarian Marrio Zucchelli station, boring core sampling and geomorphological surveys near Indian Maitri Station as well as several data analyses, numerical modeling, and other related studies.

In this presentation, we report these activities and the results so far obtained, and the observation/research plans in 2020 as well.

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