

Status and future efforts of satellite gravity mission studies in Japan

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Successful launch of CHAMP (CHAllenging Mini-Satellite Payload) in July 2000 and GRACE (Gravity Recovery and Climate Experiment) in March 2003 made practicable applications of satellite gravity mission come true. The data obtained by CHAMP and/or GRACE have drastically improved the static Earth's gravity field, and enable to detect time variable gravity fields. Regarding the gravity mission studies in Japan, we occasionally organized workshops to discuss possibility and utilization of gravity mission data over the past few years. Especially, we had a special session of the gravity mission studies in the 2002 Japan Earth and Planetary Science Joint Meeting for the first time. Furthermore, Kazuo Shibuya of National Institute of Polar Research submitted a research proposal entitled "Calibration / Validation of GRACE-Derived Gravity Fields Using the Ground Data Obtained in the Japanese Antarctic Research Expedition Area and Syowa Station, Antarctica" for NASA's Solid Earth and Natural Hazards (SENH) Research Announcement (NRA-01-OES-05), and it has been approved as a component of the GRACE science team of NASA.

On the other hand, Ministry of Education, Culture, Sports, Science and Technology funded a 3 years project (FY2002-2004) of GPS occultation and satellite gravity mission studies in Japan (PI: Toshitaka Tsuda of Radio Science Center for Space and Atmosphere, Kyoto University). This project primarily aims at developing a calibration free satellite observation system for monitoring the Earth's environmental changes related to global warming. The project consists of two study groups, and the second group led by Yoichi Fukuda of Graduate School of Science, Kyoto University devotes feasibility studies of future developments of gravity missions in Japan.

In this talk, we briefly introduce and summarize the present status of these projects regarding the gravity mission studies in Japan, and also discuss future efforts towards the utilizations of gravity mission data as well as realization of the gravity missions in Japan.