

## Improvement of ocean loading correction for estimating resonance parameters of FCR from SG data at Syowa Station, Antarctica.

# Taehee Kim[1]; Kazuo Shibuya[2]; Koichiro Doi[2]; Hideaki Hayakawa[2]

[1] Polar Science, SOKENDAI; [2] NIPR

\*FCR:Fluid Core Resonance, \*SG:Superconducting Gravimeter

To estimate resonance in the diurnal tides due to the Free Core Nutation (FCN), eigenperiod, quality factor, and resonant strength have to be determined.

Many tidal studies have been carried out with a superconducting gravimeter(SG) data at Syowa Station, Antarctica (eg. Sato et al. 1997; Iwano et al. 2005), but resonance phenomenon in the diurnal waves has not been fully discussed yet.

Ocean tide correction is essential to estimate the resonance parameters precisely (eg. Sun et al. 2004; Florsch and Hinderer. 2000), but precise estimation of ocean loading effects in Antarctica is difficult, due to insufficient accurate ocean tide model in the surrounding Antarctic oceans. We therefore tried to improve the ocean loading correction using recent global ocean tide models and local tide gauge data at Syowa station.

We used tidal gravity records from 1992 through 2002 obtained SG at Syowa Station.

The tidal gravity parameters were determined using the BAYTAP-G software package (Ishiguro et al. 1981; Tamura et al. 1991).

For ocean tide loading correction, we used the GOTIC2 program (Matsumoto et al. 2001), and have adopted FES2004 (Lyard et al. 2006) and a regional tide model CATS00.10 (Padman et al. 2002), together with the NAO99b (Matsumoto et al. 2000) and the CSR4.0 (Eanes and Bettadpur, 1999) models. We will present the results and discuss comparison among the four ocean tide models.