

Comparison of Earth's background free oscillations observed with SG and STS-1 at Mt. Stromlo, Canberra

Kazunari Nawa [1], Naoki Suda [2], Yoshio Fukao [3], Tadahiro Sato [4]

[1] GSJ, [2] Earth & Planet. Sys. Sci., Hiroshima Univ., [3] Earthq. Res. Inst., Univ. of Tokyo, [4] NAO

Earth's background free oscillations are observed at worldwide stations with superconducting gravimeters (SG), LaCoste & Romberg gravimeters and broadband seismometers (STS-1). Because the noise (signal) levels are different among these stations, we tried to compare background spectra of SG and STS-1 at the same site: Mt. Stromlo, Canberra. As a result, at $f > 1$ mHz, STS-1 shows noise level lower than that of SG. While, at $f < 1$ mHz, SG shows lower noise level than that of STS-1. SG is superior to detect very low frequency modes. However, our computations suggest that the atmospheric pressure effect should be considered at such low frequency seismic band. By correcting that effect, we can reduce noise level of SG at $f < 1.5$ mHz and, for instance, recover the OS0 mode with high S/N ratio.