

## Review of studies on Earth's background free oscillations

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An analysis of superconducting gravimeter records at Syowa Station suggested the first evidence of incessant excitation of the Earth's free oscillations. These "background" free oscillations were confirmed by an analysis of IDA gravimeter records: the Earth is freely oscillating at an observable level even in seismically inactive periods. The observed oscillations are the fundamental spheroidal modes and they cannot be explained by stacked effects of large number of small earthquakes. Subsequent analyses of STS seismometer records showed seasonal variations in excitation and coupling phenomena with acoustic modes of atmosphere. Cooperative research in Seismology and Meteorology will reveal detailed mechanism of acoustic coupling between solid earth and atmosphere in seismic frequency band.

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