

Late Pleistocene to Holocene sea-level change in East Antarctica revealed by glacial isostatic adjustment modeling

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Antarctic Ice Sheet (AIS) is the most significant storage of freshwater in the Earth's surface and most concerned in considering future sea-level rise. Present studies attempt to assess the mass loss or gain in AIS using GNSS and satellite dataset. Moreover, past AIS variability should be considered to achieve the accurate present AIS change, since presently-observed vertical movement in Antarctica includes the effect of glacial-hydro isostasy due to past AIS variability. Glacial isostatic adjustment (GIA) modeling can provide sea-level histories in Antarctica following sea-level equation. Comparison of field-based sea-level records with predicted sea-level by GIA modeling is required to constraint past AIS histories, leading to the accurate prediction of future sea-level rise.

We document predicted sea-level change in East Antarctica by GIA modeling using several Antarctica ice-loading histories and also compare with previously reported observed sea-level records. Moreover, potential sites for future sampling to obtain observed sea-level records in East Antarctica will be presented by GIA modeling.

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