

## **Antarctic ice-sheet volume change during the Last Glacial Maximum using glacial isostatic adjustment model**

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### **Abstract**

The Last Glacial Maximum (LGM: ~20,000 years ago) is characterized by the maximum volume of ice sheet. This period is important to understand glacial-period earth system due to the mutual comparison of a plenty of paleoclimatic proxies. However, the global ice volume established by far-field records does not match with a sum of individual ice sheets volume reconstructed by near-field records. This discrepancy, "missing LGM ice", leads to uncertainties in the LGM boundary condition (Clark and Tarasov, 2014). In case of Antarctic ice sheets, the wide range of ice volume is occurred during the LGM, corresponding to 5–30 m ice volume equivalent sea level. Here, we demonstrate the LGM potential Antarctic ice volume through a predicted global sea-level change during the LGM using glacial isostatic adjustment (GIA) model. We changed the Antarctic ice volume history and detected the regional difference of predicted sea-level change. The comparison of the predictions with near- and far-field sea-level records would provide the solution key of "missing LGM ice".

**Keywords:** Antarctic ice sheet, LGM, last glacial maximum, glacial isostatic adjustment, sea-level records

### ***References***

Clark, P., and Tarasov, L., 2014. Closing the sea level budget at the Last Glacial Maximum. *Proceedings of the National Academy of Sciences*, 111, 15861-15862.