

## Effect of the solid Earth response to ice sheet change on the precise projection of future sea-level rise

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Ice sheet and sea water act as surface mass loads on the solid Earth. Past and present variations of the ice sheets in both polar regions make the solid Earth deform as the elastic and the viscous responses. These deformations have been observed by geodetic, geographical and geological methods based on the field survey and the satellite measurement. To predict the sea-level change due to ice mass change and solid Earth's response based on these observations, we need to apply the numerical modelling described by the Glacial Isostatic Adjustment (GIA) theory. GIA modelling results indicate that the predicted sea-level changes in any sites are spatially non-uniform because of the crustal deformation due to the GIA depending on geometry of the surface mass loads, namely distribution of ice and water. Therefore, the precise evaluation of the GIA is vital to reconstruct present and past sea-level changes. In this presentation, we show the crustal deformation derived from GIA due to present and past ice mass changes, and illustrate the importance of GIA component for precise projection of the future sea-level rise associated with the global warming.

Keywords: Antarctic ice sheet, Greenland ice sheet, glacial isostatic adjustment