



## **Geoid-height change and vertical crustal motion due to present and past ice-mass variations in Antarctica**

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We present forward-modeling calculations of present-day geoid-height changes and vertical crustal motion due to contemporary ice-mass changes and Pleistocene deglaciation of the Antarctic ice sheet.

First, we consider a viscoelastic earth model and calculate the earth's response to the late Pleistocene deglaciation: the post-glacial rebound. After this, we assume an elastic earth and calculate the response to the secular and seasonal ice-mass changes. We determine land uplift rates along two potential GPS transects and the spatial and spectral geoid-height change. Finally, we discuss whether the signals generated are sufficiently large to be detected by terrestrial GPS stations or by the GRACE satellite gravity mission.