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Reconciling geodetic and geologic estimates of coastal vertical land motion around the British Isles

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Karegar et al. (*2016*, *GRL*) showed that independent estimates of vertical land motion from geodetic and geologic techniques are critical for understanding coastal surface motion caused by geological versus human-induced processes along the Atlantic coast of North America. Motivated by these results, we extend our analysis to the British Isles where good quality and spatially dense constraints are available from a continuous GNSS network and a state-of-the-art Holocene sea-level database. Glacial Isostatic Adjustment (GIA) along the Atlantic coast of North America causes the land surface to sink (up to -1.5 mm/yr), exacerbating tidal-induced flooding effects of sea-level rise. The British Isles are also subjected to proglacial forebulge collapse associated with the GIA response to the ancient Fennoscandian and British-Irish Ice Sheets. Here, we present an up-to-date and precise analysis based on continuous GNSS (combined GPS and GlONASS observations) and geologic records of late Holocene sea-level change to examine residuals between rates on these different timescales to determine if there is a significant residual and, if so, the processes responsible for the rate change.