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# Changes in present day ice melting observed by GPS and Superconducting Gravimeter at Svalbard, Norway

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We observe changes in the uplift rate and gravity rate at Ny-Ålesund, Svalbard, Norway. We uses GPS and Superconducting Gravimeter (SG) measurements between September 1999 and September 2010. We find that during this time period the change in gravity and vertical uplift is not a constant, but changes with time. Both the GPS and gravity measurements are better represented by three linear trends than by one, implying varying ice mass loss. Observed changes in uplift and gravity rate fits quite well with ice mass balance observations. Both GPS and SG measurements give larger uplift and gravity rate than predicted by geophysical models. The ratio between the unmodelled gravity change and unmodelled uplift indicates that the driving source is to be found in the viscoelastic process, such as post glacial rebound.