CRUSTAL DEFORMATIONS IN GREENLAND

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Data from a network of continuously operating GPS receivers in Greenland is used to measure the ongoing crustal deformation due to glacial isostatic adjustment (GIA). The network counts five GPS sites, which have measured over a time period longer than three year. However, during 2006 new GPS sites will be installed and by the end of 2006 the network will count more than 12 permanent operating GPS sires in Greenland. The GPS sites are operated by University of Colorado at Boulder, the European Center for Geodynamics and Seismology and The Danish National Space Center. Here, we present an analyse of GPS and tide gauge measurements collected between 1994 and 2006. The GPS measurements suggest a secular crustal uplift rate of -3.78 +/- 0.50 mm/yr at Kellyville and -2.83 +/- 0.88 mm/yr at Qaqortoq. Tide gauge measurements at Nuuk suggest a secular crustal uplift rate of -1.66 +/- 1.59 mm/yr. The sinking of the western and southern-Greenland is explained by glaciation during the last 4000 years, although the area has been deglaciating prior to 4000 years ago.