The Cryosphere Discuss., 8, C649–C651, 2014
www.the-cryosphere-discuss.net/8/C649/2014/

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Interactive comment on "Inferred basal friction and surface mass balance of North-East Greenland Ice Stream using data assimilation of ICESat-1 surface altimetry and ISSM" *by* E. Larour et al.

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Received and published: 13 May 2014

This is a very interesting and well written paper. Hopefully it will be published in its final version soon. However, I have a minor comment regarding your correction on elevation changes.

Page 2344 line8-10: "Elevation changes were corrected to remove the effect of vertical crustal motion due to Glacial Isostatic Adjustment (GIA) and variations of firn compaction rates in 2003–2009."

Please note that the correction for elastic vertical crustal motion (due to present-day ice loss) is in general much larger than GIA. The elastic rates are typically few cm/yr, while GIA rates are few mm/yr (e.g. see Bevis et al., 2012; Khan et al., 2010).

To solve the problem, I have uploaded two data files for northeast Greenland. They simply contain rates of elastic vertical crustal motion during 2003-2006 and 2006-2009. Rates are given in mm/yr on a 5x5 km grid and computed as described by Khan et al (2010). Feel free to use the data without any restrictions.

To access data use the following link: ftp://ftp.space.dtu.dk/pub/abbas/TCD/

References:

Khan, S. A., L. Liu, J. Wahr, I. Howat, I. Joughin, T. van Dam, and K. Fleming (2010), GPS measurements of crustal uplift near Jakobshavn Isbræ due to glacial ice mass loss, J. Geophys. Res., 115, B09405, doi:10.1029/2010JB007490.

Bevis, M., et al. (2012), Bedrock displacements in Greenland manifest ice mass variations, climate cycles and climate change, Proc. Nat. Acad. Sci., 109(30), 11944–11948, doi:10.1073/pnas.1204664109.

Best regards Shfaqat Abbas Khan DTU Space, Denmark

Interactive comment on The Cryosphere Discuss., 8, 2331, 2014.

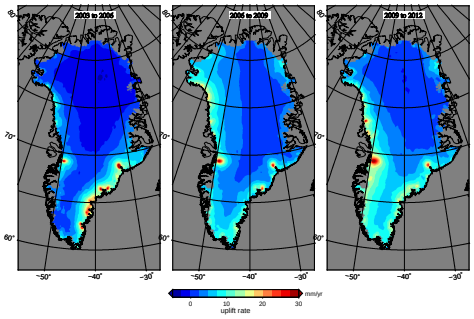

Fig. 1. Elastic uplift rates in mm/yr