

Interactive comment on “The sea level fingerprint of 21st century ice mass fluxes” by J. Bamber and R. Riva

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Received and published: 10 September 2010

CONFUSING TITLE

I find the work presented in this paper methodologically sound and very interesting. It is important to demonstrate and stress that sea-level change is a complicated issue, and that for a long time to come regional variations may be as important as the eustatic signal. In the past, this point received too little attention in climate change assessments. However, I think it is not justified to present the results as being a representative fingerprint for the 21st century. This is probably not what the authors mean to do, but it is what the title suggests. I think somewhere in the paper the authors should stress more clearly that the pattern of ice wastage may change substantially in the near future, and the related distribution of sea-level change as well. For instance, one could

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imagine that in the next 10 years the ice loss in Greenland and Alaska halves, and that the ice loss in Antarctica and Patagonia doubles. This would result in a pattern with a substantially larger sea-level signal in northwestern Europe.

I do not understand the sentence (in the abstract) “The spatial pattern of RSL variations due to the observed ice mass loss is temporally invariant”. For the observed ice mass loss in 2000–2009 this is trivial, because there are just fixed numbers in the analysis. Or is something implied/concluded for the future? This sentence should be clarified, and perhaps the title of the paper should be “The sea level fingerprint of ice mass fluxes during the period 2000–2009”.

In most cases, policy-makers and people assessing impacts of climate change read only abstracts, or even only titles of papers. It is therefore of great importance that titles and abstracts are carefully formulated. During the past few years we have seen several papers from the glaciological community that had titles and abstracts implying wild extrapolations. This helps to sell the stuff, but in the end it does more harm than good to the climate issue (as we have witnessed).

I stress that my criticism does not concern the good work behind this paper. It is an admirable attempt to arrive at a global picture of ice wastage and the implications for sea-level change. Nevertheless, I suggest to the authors to make the title and the abstract more transparent and precise.

Interactive comment on The Cryosphere Discuss., 4, 1593, 2010.