

## ***Interactive comment on “Applicability of the Shallow Ice Approximation inferred from model inter-comparison using various glacier geometries” by M. Schäfer et al.***

**G. Gudmundsson (Editor)**

ghg@bas.ac.uk

Received and published: 30 September 2008

As evident from the two reviews and the one interactive comment, this manuscript raises a number of issues that need to be addressed by the authors before it can be considered further. I must ask you to give me point by point replies to objections raised by both reviewers and in interactive comments.

In particular:

-The experiments performed need to be better justified.

For example: Why do you do prognostic runs ignoring mass-balance altitude feedback

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper



when the final length is determined by mass-balance only? What can this experiment possibly tell us about differences between the models?

-What do diagnostic simulations performed with geometries that are not in steady state tell us about different models apart from the simple fact that different models will produce different results? Have we learned anything new about how these differences depend on geometries (aspect ratios, wavelengths, surface slopes) that we did not know before? For example: You find that SIA can overestimate velocities by 5 to 10 with respect to FS. But is this numerical factor not just as arbitrary as the geometries chosen? We all know that by changing the geometry of a SIA model at just one point these differences can be made arbitrarily large. For example, for an (almost) vertical wall the SIA velocities will be (almost) infinite, while FS velocities will be some finite number.

-I find it very difficult to extract from the paper any new and substantial conclusions. I might be missing something here so I would like to know directly from you which of your findings you consider new and substantial?

Do not send me an updated version of the manuscript. Depending on your answers a decision regarding the acceptance/rejection of the manuscript will be made.

Greetings G. Hilmar Gudmundsson

---

Interactive comment on The Cryosphere Discuss., 2, 557, 2008.

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper

