

Interactive comment on “Strain localisation and dynamic recrystallisation in the ice-air aggregate: A numerical study” by Florian Steinbach et al.

Florian Steinbach et al.

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Dear Dr. Ritz,

thank you very much for considering our manuscript for publication in The Cryosphere (IPICS special issue). We considered and addressed the referees' comments, replied to all of them and indicated specific changes that are made in the revised manuscript. The major changes in the revised manuscript are:

1) New discussion sup-chapter “4.5 Limitations of the modelling approach”. In particular, the assumption of an incompressible air phase concerned the referees. We regard this an important issue and created a detailed reply that is found at the end of both reply letters.

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2) New discussion sub-chapter “4.2 Natural firn microstructures and numerical simulations”, the comparison has moved from section 3. To avoid redundancy, section 2.7.3 has been removed, and is now part of 4.2.

3) Supplementary figures S1 and S2 provide more simulations. The figures are also found with the specific replies.

Two additional changes were (a) the correction of a small error affecting the eigenvalues in Table 2 and Fig. 7, that does not affect the observations and interpretations. (b) After submission, Cyprych et al. published a study that supports our interpretation and adds to the discussion. We added Cyprych et al. (2016) as a reference and refer to the study in the revised manuscript.

The reply letters and a revised manuscript indicating the specific changes were uploaded to the discussion forum as the following files:

- AuthorReply_Referee1.pdf
- AuthorReply_Referee2.pdf
- RevisedManuscript_ChangesHighlighted.pdf

Thank you very much for your efforts.

With best regards,

Florian Steinbach and co-authors.

Interactive comment on The Cryosphere Discuss., doi:10.5194/tc-2016-167, 2016.

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