

Dear Dr. Delaney,

We thank you and both reviewers for reviewing our manuscripts and for providing valuable and insightful comments and suggestions.

We have addressed all comments. The main changes in the manuscript include:

- revising the discussion of the Inverse Barometer Effect (IBE) contribution;
- adding a solely Global Environmental Multiscale Model (GEM)-based IBE correction;
- adding a bending analysis and quantifying the resulting error in the observed Differential Interferometric Synthetic Aperture Radar (DInSAR) results;
- improving the ice surface displacement reconstruction through the inclusion of all tidal constituents,
- revising our discussion for the flexure-zone and grounding-zone widths and their inland migration.

Our responses to the individual comments are provided below and within the responses to each reviewer, and are highlighted in blue font.

We are grateful for the reviewers' suggestions, which we believe have improved the quality and scope of the manuscript. We have therefore added acknowledgements in the Acknowledgements section. We hope that the revised and improved version of the manuscript will be of even greater interest to the broad and diverse audience of The Cryosphere.

Thank you.

Best regards,
Yulia Antropova
on behalf of all co-authors

Editor's comment by Dr. Ian Delaney:

The study seems well thought out and rigorous (subject to assessment during peer review). There were some parts of the "Results" section that some reviews may suggest are more discussion points than results (i.e. Ln 249, Ln 347-352 (sea water intrusions), Ln 371 (will likely become...)). These matters are quite small and can be addressed now or during the revision process.

Thank you for your suggestions. These parts from the Results section were revised and moved to the Discussion section as follows:

Ln 249 and Ln 347–352: moved to Section 4.1.

Ln 371: moved to Section 4.4.