

Comments to the author:

Dear authors,

Thank you for your comments to the reviewers.

The two reviewers note that the paper presents a new method to derive sea ice ridge height using TerraSAR-X imagery, but they also point out some important questions. Particularly, the text should be shortened, the structure of the paper should be reorganized, the impact of warm air temperature should be better explained, and how the work can be used to aid safe navigation should be better explained. These are all important comments to improve the quality of the paper. I strongly encourage you to take into account these comments in the revised paper.

Best,

Dr. Kang Yang
Editor, The Cryosphere

Response by the authors

Dear Dr. Yang

Thank you for your comments and encouragement.

Following your suggestions and also those of the Reviewers our paper has been thoroughly revised. It has been shortened so that the length is about 65% from the previous length. Data/methods, results and discussion/conclusions are now in their own sections (2,3 and 4) and we have rearranged and edited all material accordingly, removing all repetitions. The Introduction has been shortened to a length that is typical in TC papers, and the same applies to Discussion and Conclusions. As suggested by the Reviewers, several groups of short sections have been combined into longer ones and the text flow has been improved by combining short paragraphs and by combining short sentences into longer ones. The text has been also gone through a language check (British English). We have also gone through the minor comments of the Reviewers once more when revising our paper.

We also included a separate section on the use of the results in ice information production, and addressed the effect of above zero temperatures and wet snow in the Introduction and Discussion. However, we remark also that this issue cannot be conclusively settled otherwise than by applying the approach to SAR image pairs over the same ice fields and taken before and after the change in ambient conditions.

In addition, the graphics have been in part redrawn. We think that the present Figures add essentially to the accessibility of the paper and hope that they can be incorporated as the paper is otherwise of reasonable length. Due to the comprehensive changes the difference file is not very informative, but we have uploaded it anyhow.

Best Regards,

Mikko Lensu and Markku Similä