

General comment to the editor, in reply to author comments

Dear editor, we would very much like to thank the reviewers and yourself for the extensive and diligent comments. As these were quite extensive we want to summarize our changes concisely. Therefore we provide an overall summary here.

Some of the reviewer suggestions would require quite substantiative revisions, which also would require new data analysis and new processing steps. Note that we are not able to implement this work at this stage because the ESA SIN'XS project has ended, and key researchers, in particular the first author, have moved on to assume jobs in industry which prevents them from carrying out further work. Throughout our replies we have therefore argued that the scope of our project was limited and that further analysis should be carried out in the future. In fact, the main idea of the SIN'XS project was to collect data and to discuss with the community how they should be analysed and to offer to the community to carry out some of these analyses themselves according to their own expertise. Uniquely, the extensive multi-product data set compiled by SIN'XS is publicly available for further analysis. For this reason, we have particularly extended the discussion, conclusions, and outlook to provide suggestions for further work. Among those suggestions are more thorough analyses of interannual variability and trends. This was a key point extensively elaborated on by Reviewer #1 (Robbie Mallet). However, we also discuss for which this actually matters and for what not. The seasonal cycle is the largest temporal change in the overall time series. There is merit to analyse the ability of all products to reproduce it. Clearly, if the seasonal cycle was removed then interannual changes and long-term trends would dominate the signal. However, as the general uncertainty of most products is large due to the many assumptions involved in ice thickness retrievals or modeling, it is clear that the obtained trends would not have smaller uncertainties and the trends could not be reliably detected regardless if the seasonal cycle was removed. Indeed it is an important conclusion that trends were generally small during the analysed period. We also have changed the order of key words in the title in order to show that intercomparison of the large multisensor SIN'XS data set is at the core of the SIN'XS results, and not further trend analysis.

Another suggestion for future work is the inclusion of cross correlations between anomalies, both temporally and regionally. That would be a better metric than long term regressions between data sets because the latter are mostly sensitive to mean agreement, with interannual variability affecting RMSD.