

Interactive comment on “Assessment of Contemporary Satellite Sea Ice Thickness Products for Arctic Sea Ice” by Heidi Sallila et al.

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The paper "Assessment of Contemporary Satellite Sea Ice Thickness Products for Arctic Sea Ice" is an interesting study on the consistency of different Arctic sea-ice thickness products from CryoSat-2 and other Earth Observation data sets. I however want to shortly point out a potential irregularity that I have noticed in Figure 5. This figure shows the increase of mean thickness in the Arctic Basin for the different products and I cannot reproduce the growth curves of the merged CryoSat-2/SMOS (cs2smos) product as shown in Figure 5. While the general magnitude seems correct, there is significant noise on the cs2smos curve with irregular decreases of monthly mean thicknesses in the Winter growth season.

C1

I do not observe this behaviour when I compute mean Arctic Basin sea ice thickness with the weekly merged CryoSat-2/SMOS thickness product (version 1.4) and it also has not been observed in previous publications (e.g. Ricker et al, 2017). I have attached two figures illustrating my version of the mean thickness curve and the respective region definition for the Central Arctic Basin. My suggestion to the authors is to verify their methodology and amend the figure and conclusions derived from it if needed.

Best Regards, Stefan Hendricks

Ricker, R., S. Hendricks, F. Girard-Ardhuin, L. Kaleschke, C. Lique, X. Tian-Kunze, M. Nicolaus, and T. Krumpfen (2017), Satellite-observed drop of Arctic sea ice growth in winter 2015–2016, *Geophys. Res. Lett.*, 44, 3236–3245, doi:10.1002/2016GL072244.

Interactive comment on The Cryosphere Discuss., <https://doi.org/10.5194/tc-2018-197>, 2018.

C2

Arctic Basin



Fig. 1. Mask for the Arctic Basin (green area indicates area for computing mean sea-ice thickness)

C3

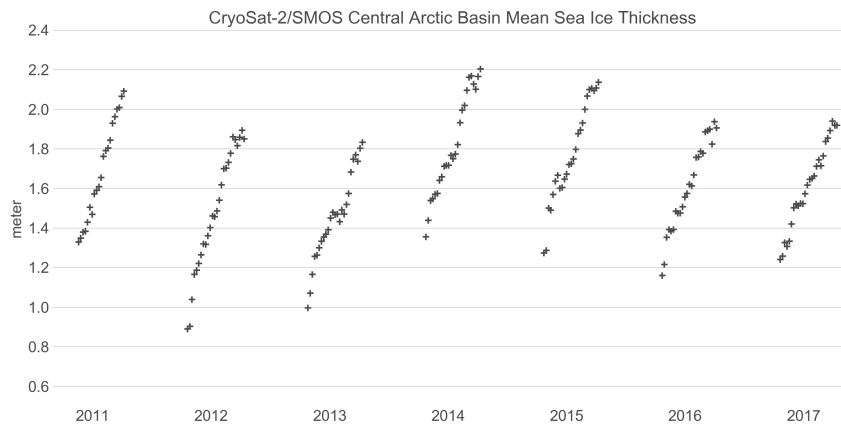


Fig. 2. Mean sea-ice thickness time series in the Arctic Basin from merged CryoSat-2/SMOS data (version 1.4)

C4