

The Cryosphere Discuss., author comment AC1  
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## Reply on RC1

YoungHyun Koo et al.

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Author comment on "Semi-automated tracking of iceberg B43 using Sentinel-1 SAR images via Google Earth Engine" by YoungHyun Koo et al., The Cryosphere Discuss., <https://doi.org/10.5194/tc-2021-131-AC1>, 2021

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We appreciate your great comments and suggestions. We agree that scatterometer is another good tool to track large icebergs. We will add more descriptions and references about scatterometers in the second paragraph of introduction as following:

*Radar remote sensing, such as scatterometer or synthetic aperture radar (SAR), is an efficient tool for monitoring both movements and area changes of icebergs. While multispectral images can be useful for observing icebergs, they cannot be used during polar night or under cloudy conditions. In contrast, radar remote sensing can be used for analysis regardless of the weather conditions or time of year (Han et al., 2019; Mazur et al., 2017; Wesche and Dierking, 2012). In particular, although scatterometers facilitate daily position and motion observations of large icebergs (Budge and Long, 2011; Stuart and Long, 2011a, Stuart and Long, 2011b), SAR instruments have a more significant advantage in precise observations of iceberg area changes thanks to their relatively fine spatial resolutions. Indeed, various SAR instruments have been used for detecting or tracking icebergs in the polar oceans including ERS-1 (Young et al., 1998; Willis et al., 1996), ENVISAT (Li et al., 2018; Howell et al., 2004; Mazur et al., 2017), Radarsat-1 (Wesche and Dierking, 2015; Lane et al., 2002; Power et al., 2001), Radarsat-2 (Scheuchl et al., 2004; Denbina and Collins, 2014), TerraSAR-X (Frost et al., 2016), and Sentinel-1 (Lopez-Lopez et al., 2020; Moctezuma-Flores and Parmiggiani, 2017; Heiselberg, 2020; Han et al., 2019).*

We will also add the references you suggested (Budge and Long, 2017; Stuart and Long, 2011) in the section 4.1, with the description that sea ice may protect icebergs from exposure to wave stress.

Thank you again for your comment for our paper.

Sincerely,  
Young