

## ***Interactive comment on “A combined approach of remote sensing and airborne electromagnetics to determine the volume of polynya sea ice in the Laptev Sea” by L. Rabenstein et al.***

### **Anonymous Referee #2**

Received and published: 24 March 2013

#### General comment:

The paper describes a method to estimate the sea-ice volume using the information of sea-ice area from SAR images and the ice thickness information from HEM data. The method is applied to the eastern parts of the Laptev Sea for the winter months December 2007 to April 2008. A sea-ice area of 52 650 km<sup>2</sup> and a sea-ice volume of 93.6 ±26.6 km<sup>3</sup> is calculated for the surveyed area. A verification is done using the NAOSIM model. I think this well written and structured paper is acceptable after minor revisions.

#### Minor Revisions:

C189

Page 443, Line 1: Please add here "during wintertime"

Page 443, Line 2, 5, ...: Landfast is one word.

Page 443, Line 4-5: "...are directed away from the land fast ice,..." describes not the direction. The reader does not know if it the winds are directed to the coast or the drift ice.

Page 443, Line 11: Do you mean leads with other wind-driven openings? Maybe you can write polynyas and leads.

Page 445, Line 6: Is it distinct when the backscatter of new ice can be low and high? I am not sure if new ice can only be recognized by its backscatter. The person that interprets the image uses also the information of the location of the new ice (polynyas occur in the same regions) and the shape of polynyas.

Page 448, Line 18: "one day or so" -> colloquial english

Page 450, Line 6: Please delete "a" before several exceptions

Page 451, Line 28: Please add "of" between "times" and "our"

Page 453, Line 17: Tf is instead of Tf ist

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Interactive comment on The Cryosphere Discuss., 7, 441, 2013.