

## ***Interactive comment on “Characterization of L-band synthetic aperture radar (SAR) backscatter from floating and grounded lake ice in arctic Alaska” by M. Engram et al.***

### **Anonymous Referee #1**

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Characterization of L-band synthetic aperture radar (SAR) backscatter from floating and grounded lake ice in arctic Alaska by Engram and others.

Summary: Engram and others investigate the utility of L-band imagery for identifying floating and grounded lake ice. They then compare these results to C-band imagery that previous studies have shown to be useful at differentiating between floating and grounded lake ice. They find C-band to be superior to L-band for identifying floating from grounded lake ice.

General Comments: This manuscript provides a nice comprehensive review of previous lake ice studies and for the most part is fairly well-written. However, the major

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concern I have with this manuscript is its lack of new, and more importantly useful, information with respect to remote sensing theory, techniques and/or approaches.

The authors find that L-band is not an improvement over C-band for differentiating between floating lake ice and grounded lake ice, clearly shown in Figure 4. This is the main result of the paper and this result does not contribute to the development of new remote sensing information (i.e. theory, techniques, or approaches) from what was previously already well established in the literature. I think this paper will have little value to the scientific community simply because it is a proof of concept study that shows L-band is not an improvement over C-band. “If” L-band was an improvement over C-band, then this study could find a place in the literature but that is not the case. Based on the lack of significantly new publishable information, I cannot recommend this paper for publication in The Cryosphere

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