

## B05-O17

### QUASI-DAILY PAN-ARCTIC SEA-ICE LEAD DETECTION FROM MODIS THERMAL INFRARED IMAGERY

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Polynyas and leads are key elements of the wintertime Arctic sea-ice cover. They play a crucial role in surface heat loss, potential ice formation and consequently in the seasonal sea-ice budget. Based on an evaluation of different lead segmentation techniques<sup>1</sup> we derive daily lead composite maps for the period from 2003 to 2014. Cloud artifacts that arise from ambiguities in the segmentation process and shortcomings in the MODIS cloud mask represented a major drawback of the obtained daily maps. We present and apply an updated cloud artifact filter<sup>1</sup> that enables us to assign an uncertainty flag to each detected lead pixel. The quasi-daily lead product can be used to deduct the occurrence, structure and dynamics of wintertime sea-ice leads and to assess seasonal divergence patterns of the Arctic Ocean (Fig. 1).

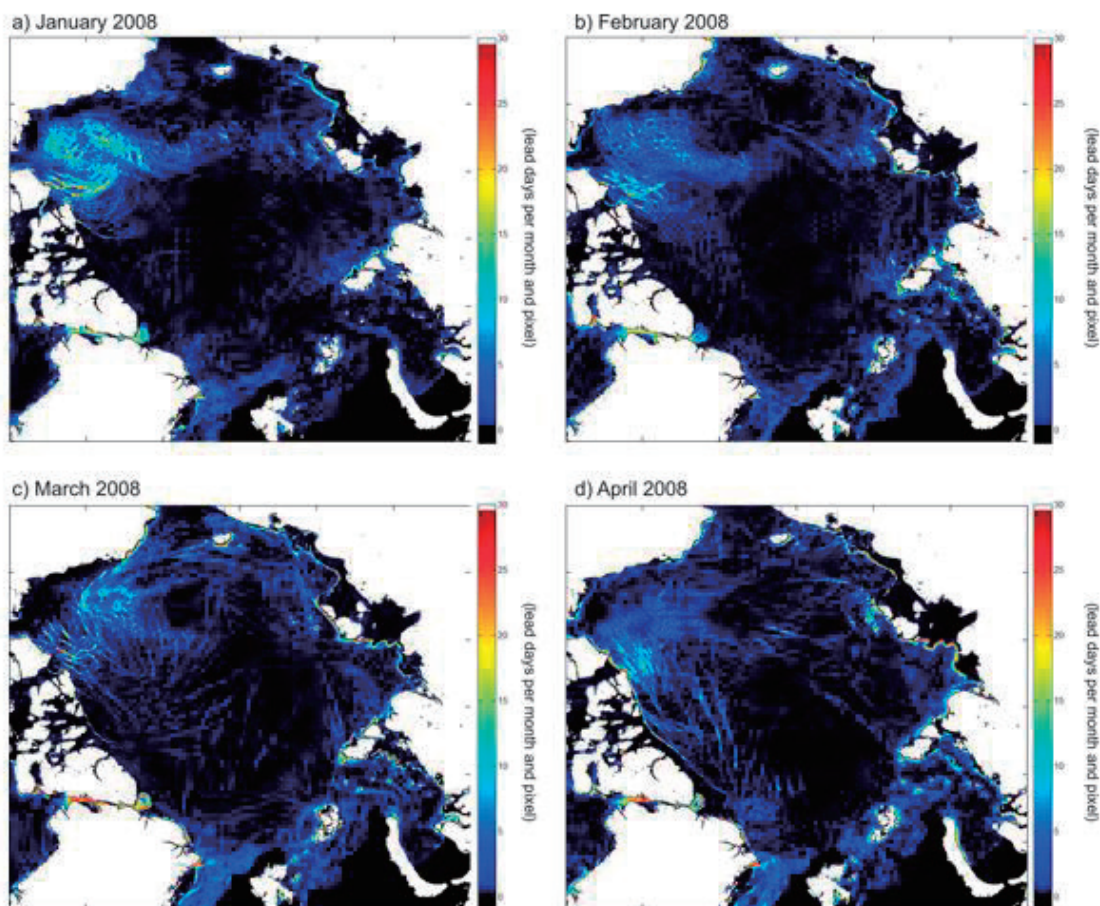


Fig. 1: Monthly lead frequency from January to April, 2008 (Willmes and Heinemann, 2015).

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<sup>1</sup> Willmes, S., and G. Heinemann (2015). Pan-Arctic lead detection from MODIS thermal infrared imagery. *Annals of Glaciology* 56(69), 29-37, doi:10.3189/2015AoG69A615