**The Cryosphere
Discussions**

Interactive
Comment

Interactive comment on "An algorithm to detect sea ice leads using AMSR-E passive microwave imagery" *by* J. Röhrs and L. Kaleschke

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Thank you very much for you interactive comment. It is correct that one has to account for the atmospheric influence. Mathew et al. (Trans. Geosc. Rem. Sens., 46(8), 2298-2306,2008) describe a method to calculate the sea ice emissivity by using radiative transfer and the atmospheric state from a numeric weather prediction model. The text in our article is indeed a little bit misleading in the present form because we wanted to say that we have to correct for this atmospheric effect but we actually totally neglect the atmosphere. The reason for this is, that the algorithm was specifically designed to be applied to AMSR-E data only. We do not want to use additional information about the actual atmospheric state or attenuation coefficient. This is also not necessary because the proposed technique involves a high pass filter which is not sensitive to the

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rather smooth atmospheric field. Frontal atmospheric systems with sharp edges could perhaps pose a problem. But in general the spatial derivative is sensitive only to edges on different spatial scale such as leads.

Interactive comment on The Cryosphere Discuss., 4, 183, 2010.