The Cryosphere Discuss.,
https://doi.org/10.5194/tc-2018-68-SC1, 2018

The Cryosphere Discussions
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EGU

Interactive comment on "A scatterometer record of sea ice extents and backscatter: 1992–2016" *by* Maria Belmonte Rivas et al.

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Received and published: 11 April 2018

Your conclusions (pg 18 para 5) correctly refer to the potential of combinations of contemporaneous scatterometer data at Ku-band and C-band, together with multifrequency passive microwave data. However, arguably this is not new promising potential. Max. Likelihood, Baysian classifications of sea ice using combined active/passive microwave were performed and published already in Remund et al (2000) An Iterative Approach to Multisensor Sea Ice Classification, IEEE TRANSACTIONS ON GEOSCIENCE AND REMOTE SENSING, VOL. 38, NO. 4, JULY 2000. It would be helpful to refer to this work.

Arguably the task at hand is simply to go ahead and to use all fundamental climate

data records from Scatt (SASS, ERS AMI, NSCAT, QSCAT, MetOp, OSCAT, etc.) with Passive Microwave (ESMR, SMMR, SSM/I, AMSR, MWRI, etc.) to generate a combined timeseries of areal estimates of different ice classes which can be used to guide reanalyses. They can also be combined with the contemporaneous altimetry ice thickness datasets to derive the true Essential Climate Variable of interest - sea ice volume, broken down into the different ice classes.

With Antarctification of the Arctic, the ice pack will become more seasonal, and multiyear ice progressively replaced, and thus the Antarctic example already published is quite relevant in this context. Mark Drinkwater

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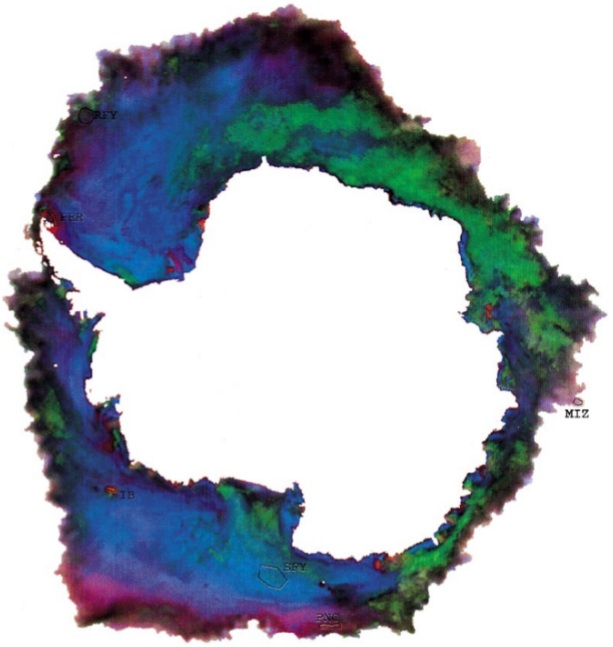

Fig. 5. RGB composite image of the first three principal components for 1996 JD 261-266. The red channel is the top principal component image, the green is second, and blue is third. The image is useful in evaluating the type of information contained in the top three PCA scores. The six training regions are also indicated.

Fig. 1.