

Interactive comment on “Seasonal sea ice prediction based on regional indices” by John E. Walsh et al.

Anonymous Referee #2

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“Seasonal sea ice prediction based on regional indices” is an intriguing new look into the statistical predictability of sea ice conditions as defined by the Barnett Severity Index (BSI). The BSI is one of the longer duration sea ice metrics on record and I commend the authors for reaching back prior to the satellite era to paint a more thorough picture of sea ice conditions. We need more work in this area. As the authors note, this paper somewhat extends previous work by Drobot but it is not a precise analogue. The present paper has three main objectives: (1) to quantify predictability inherent in antecedent spatial distributions of sea ice, (2) to distinguish predictability of pan-Arctic sea ice from that of regional predictability, and (3) to distinguish quantitatively the trend-derived predictability and predictability of departures from trend. What is written in the paper is very well done. I have few critical issues with this aspect

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of the paper. Assessing the predictability of de-trended data is a key baseline contribution for further developing statistical sea ice forecasts. However, I am left wanting with just this analysis. In the Drobot paper, sea ice data was supplemented with atmospheric teleconnections and other data. This paper would be greatly strengthened by adding additional predictors so we can begin to better understand the predictability of de-trended sea ice data. For the above reason, I recommend this paper needs major revisions. To clarify, I find little fault with what is here – it's just that I don't think it's enough. By adding additional predictors, this will become a more complete package and one that will have high visibility moving forward.

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