**Earth System
Dynamics**
Discussions

ESDD

**Interactive
comment**

Interactive comment on "September Arctic Sea Ice minimum prediction – a new skillful statistical approach" *by* Monica Ionita et al.

Anonymous Referee #2

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In this paper, the authors propose a statistical model to predict the Arctic September sea ice extent (SSIE) and East Siberian Sea ice extent (ESSIE) up to 4 months ahead with a high predictive skill compared to previous studies. Stability maps and stepwise multiple regression analysis are applied to find the optimal predictors for the model in regions and variables respectively. The results of prediction here are excellent and reliable. I believe the approach to build statistical prediction model between the predictors and predictand could be widely used in more climate predictions. I recommend to publish this paper and would like to make a few minor comments.

Minor comments:

1. In Figure 1-3 and S1-S3, those regions inside the black boxes are used for SSIE. However, besides those regions, there are also other regions with significant corre-

lation coefficients. Some regions are even more significant than those regions you choose. Why do you only choose those regions in the black boxes? Could you give an explanation?

2. In Section 3.2, I recommend giving the definition or boundary of East Siberian Sea as well as other areas mentioned in Table 2.

3. In Section 3.2, there is a writing mistake in the sentence ". . . coefficient between the observed and forecasted ESS SSIE is r = 0.94 (r = 77) . . .". I think "r = 77" should be corrected as "r = 0.77".

Interactive comment on Earth Syst. Dynam. Discuss., https://doi.org/10.5194/esd-2018-61, 2018.