Performance of the 2017 SIO

Julienne Stroeve and the SIPN team

National Snow and Ice Data Center
Advancing knowledge of Earth's frozen regions

from space to core earthsciences UCL

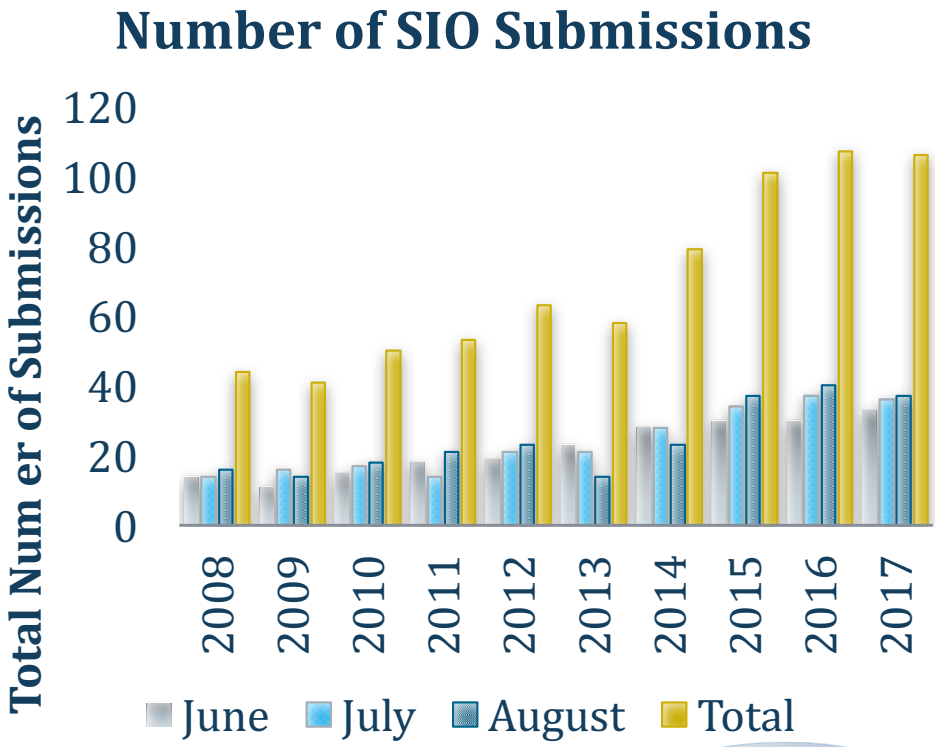
CIRES

The Sea Ice Prediction Network

- The number of contributions for the September sea ice extent was similar to last year.

- Since 2016 SIPN has also requested Alaska regional forecasts.

- New this year were requests for Antarctic maximum extent.



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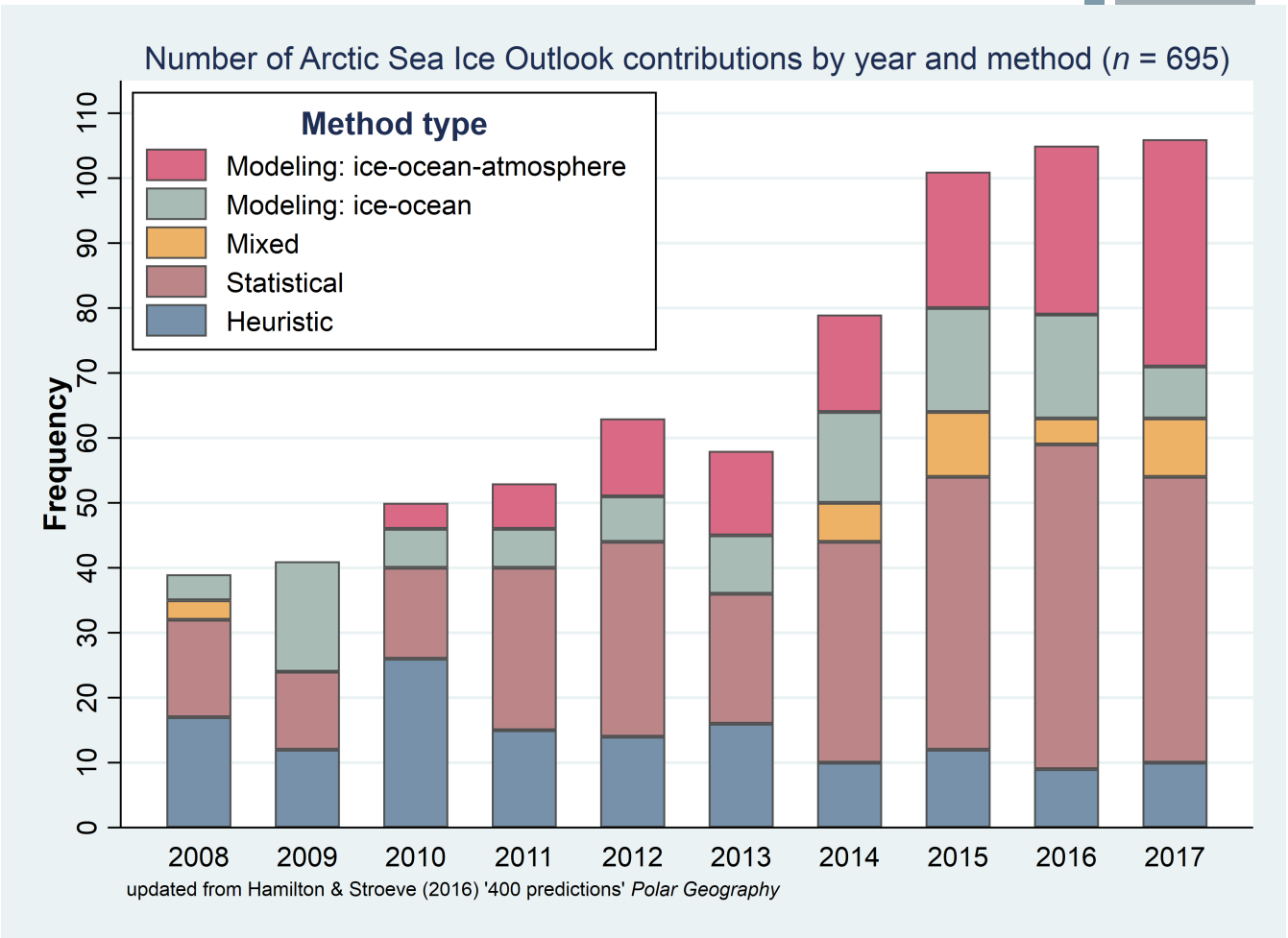
Contributions by Method

- This year we had a record number of dynamical model contributions (43), with 35 from coupled ice-ocean atmosphere models



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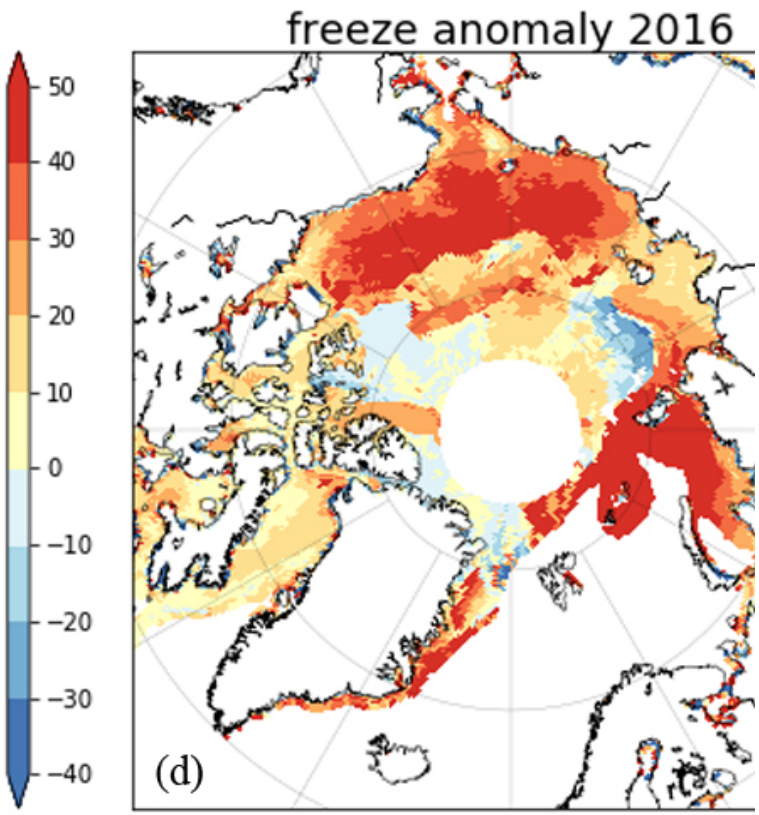
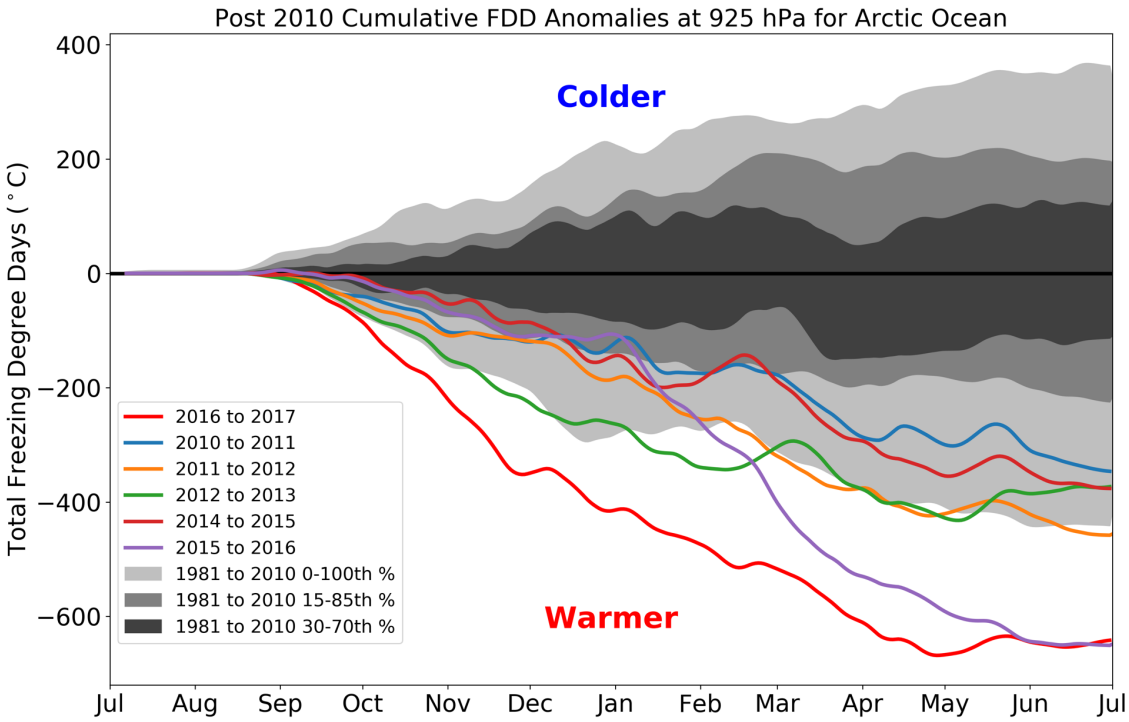
Lead-up to summer 2017

Delay in Autumn Freeze-up



Least number of FDDs



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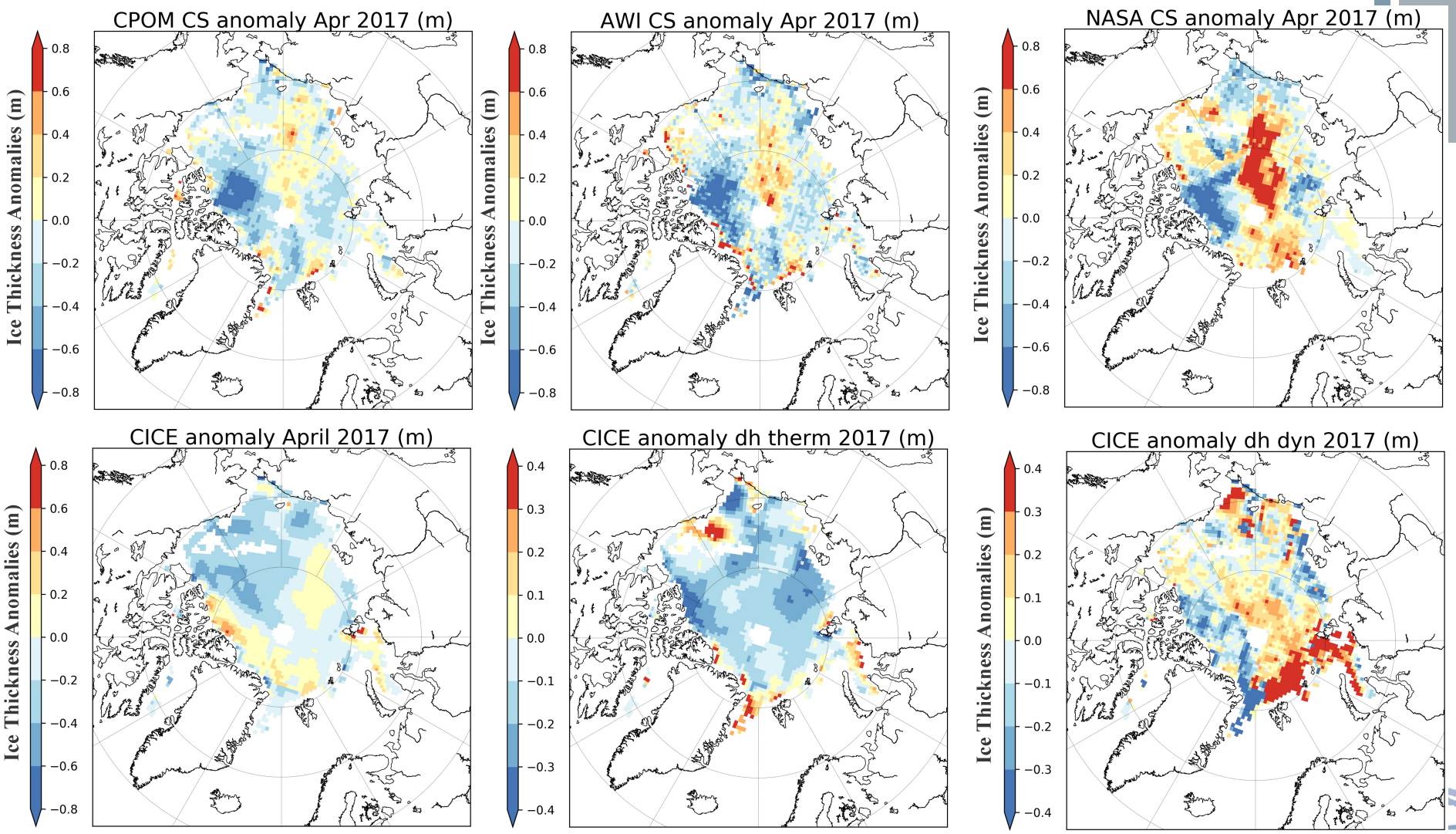
Thin ice in many regions



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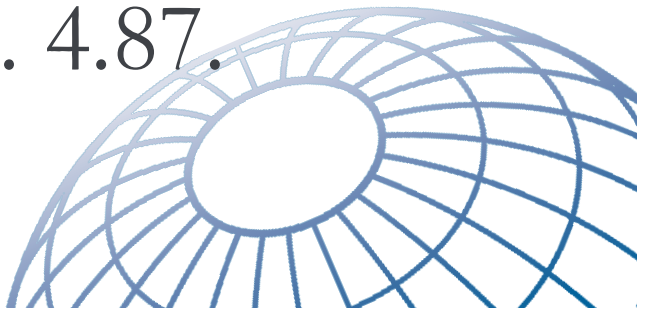
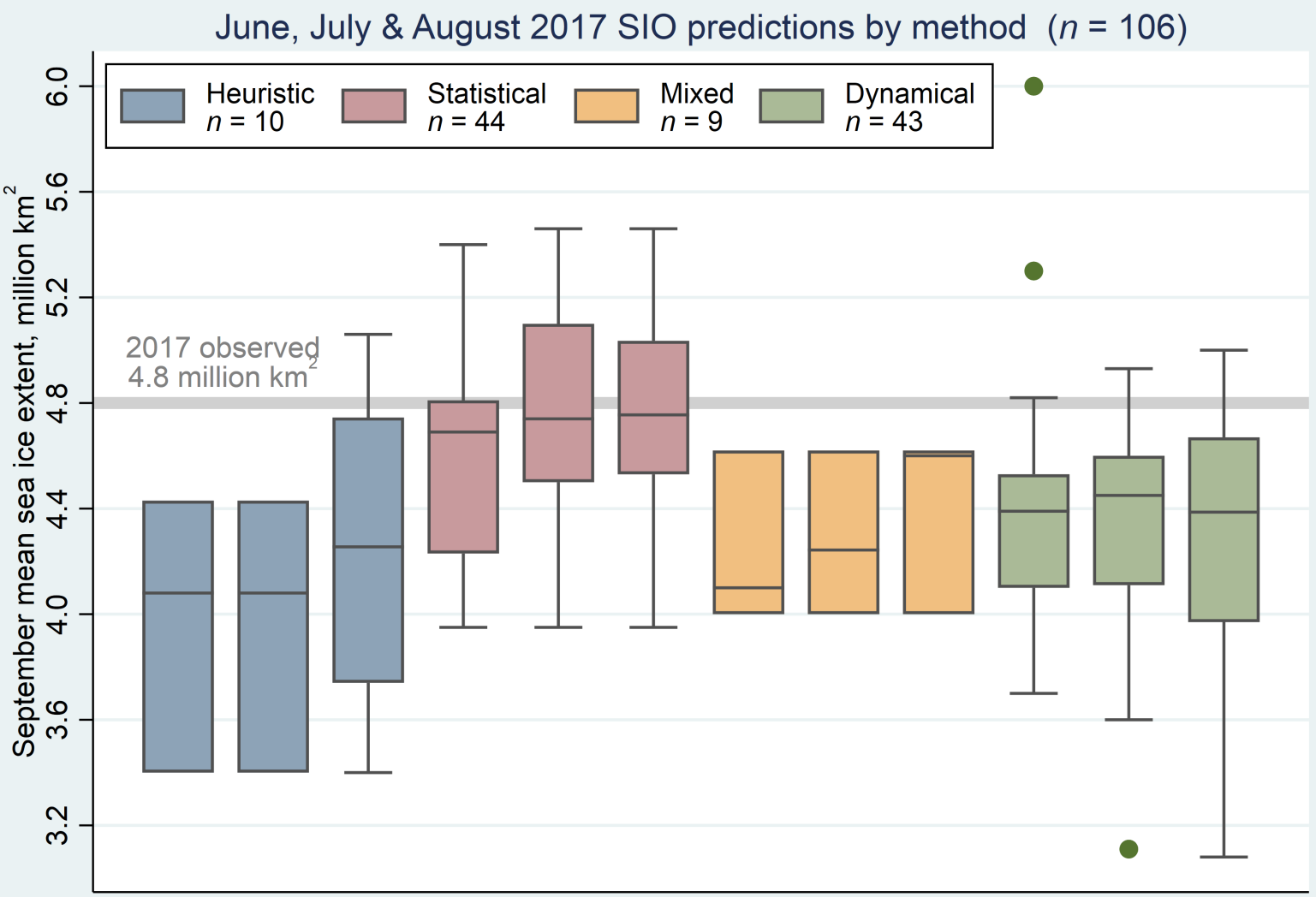
How did the SIO perform?

- Note: NSIDC changed their averaging method this year.
  - Now the method is based on averaging daily sea ice extents rather than using the monthly mean sea ice concentration.
- The impact is that the overall September sea ice extent is slightly reduced
  - September 2017 is now 4.80 vs. 4.87.



Predictions by method



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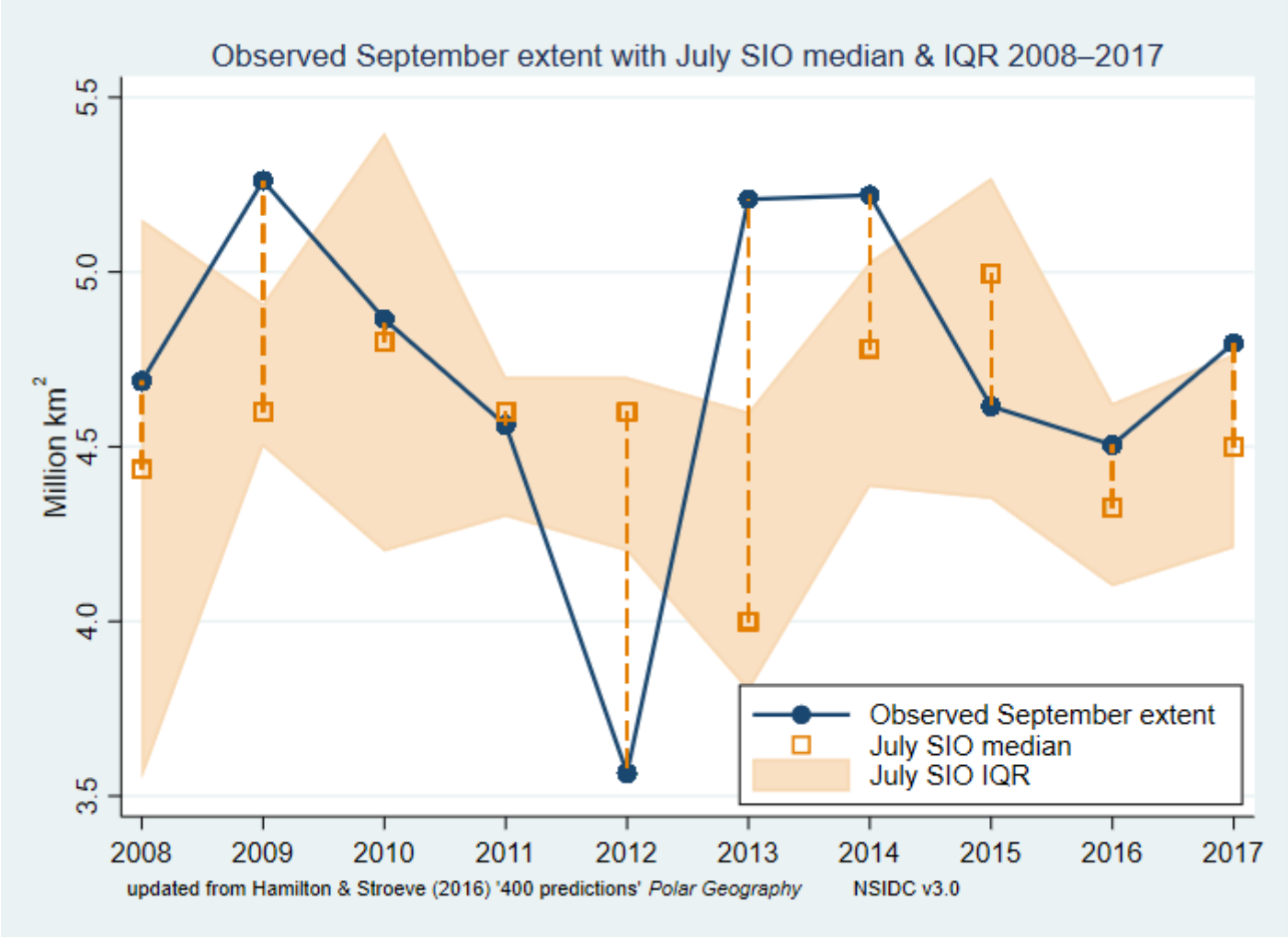
How does 2017 compare to previous years?

- Observed September sea ice extent is generally well-captured by the IQR of the SIO.
- Median RMSE of 0.593 km^2



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What about Alaska forecasts?

Alaska regional forecasts

- This year we received 6 regional forecasts in June and July and eight in August.

Combined Beaufort, Chukchi and Bering Sea Extent

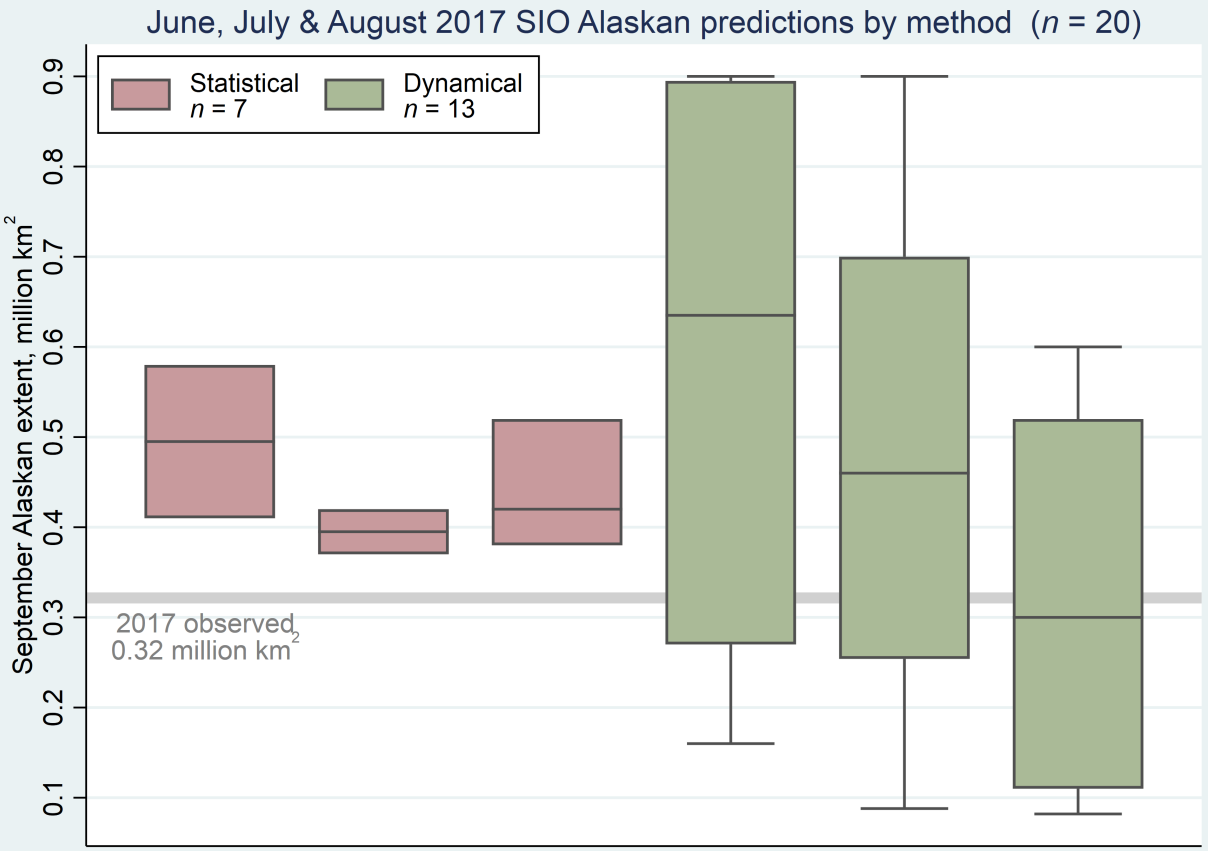

Figure from Larry Hamilton

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Forecasts of Ice Probability

Forecasts of **S**ea **I**ce **P**robability

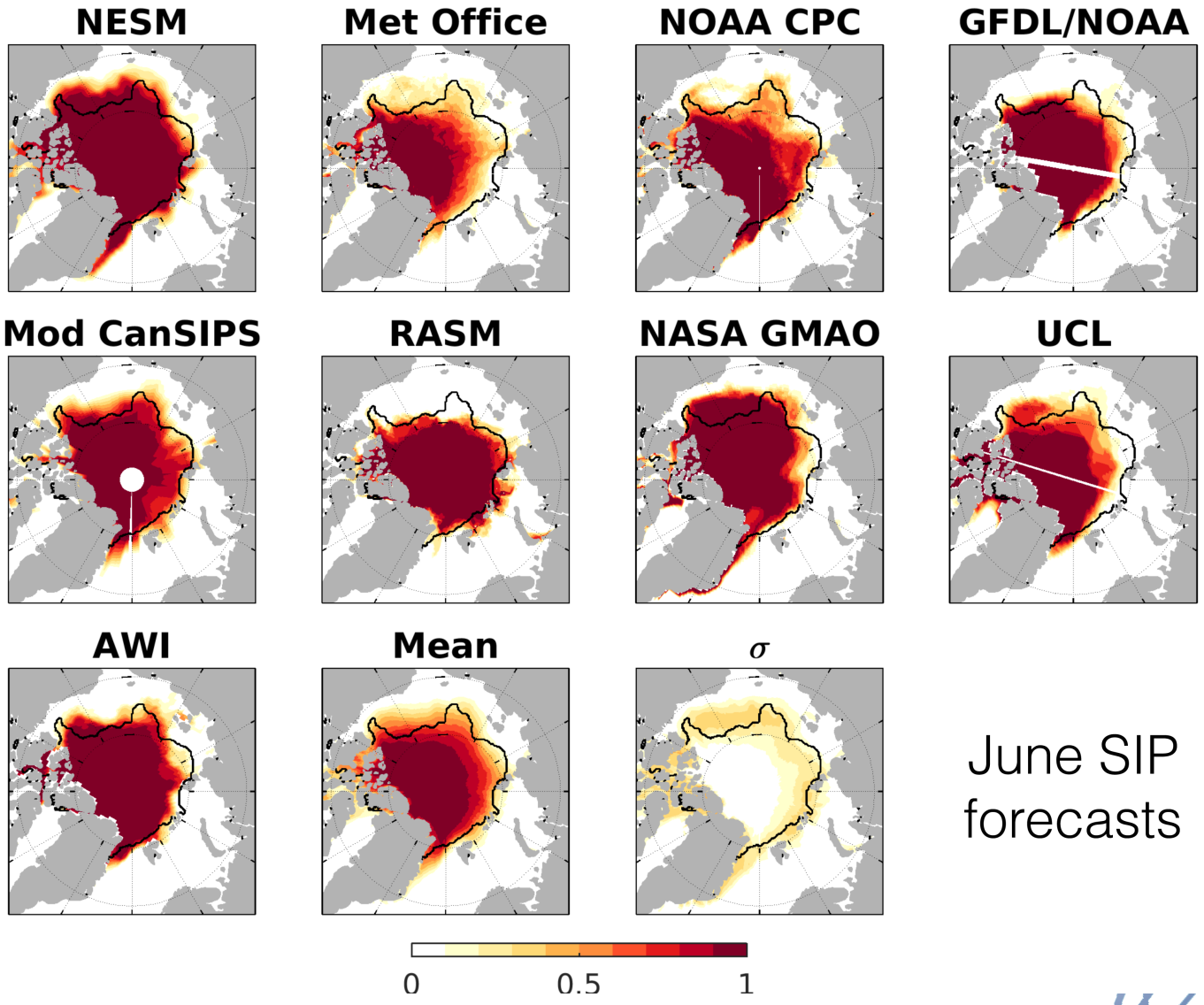


Figure from Ed Blanchard-Wrigglesworth

June SIP forecasts

Brier scores for June 2017 SIPs (measure of SIP accuracy, 0=perfect forecast, 1=erroneous forecast)

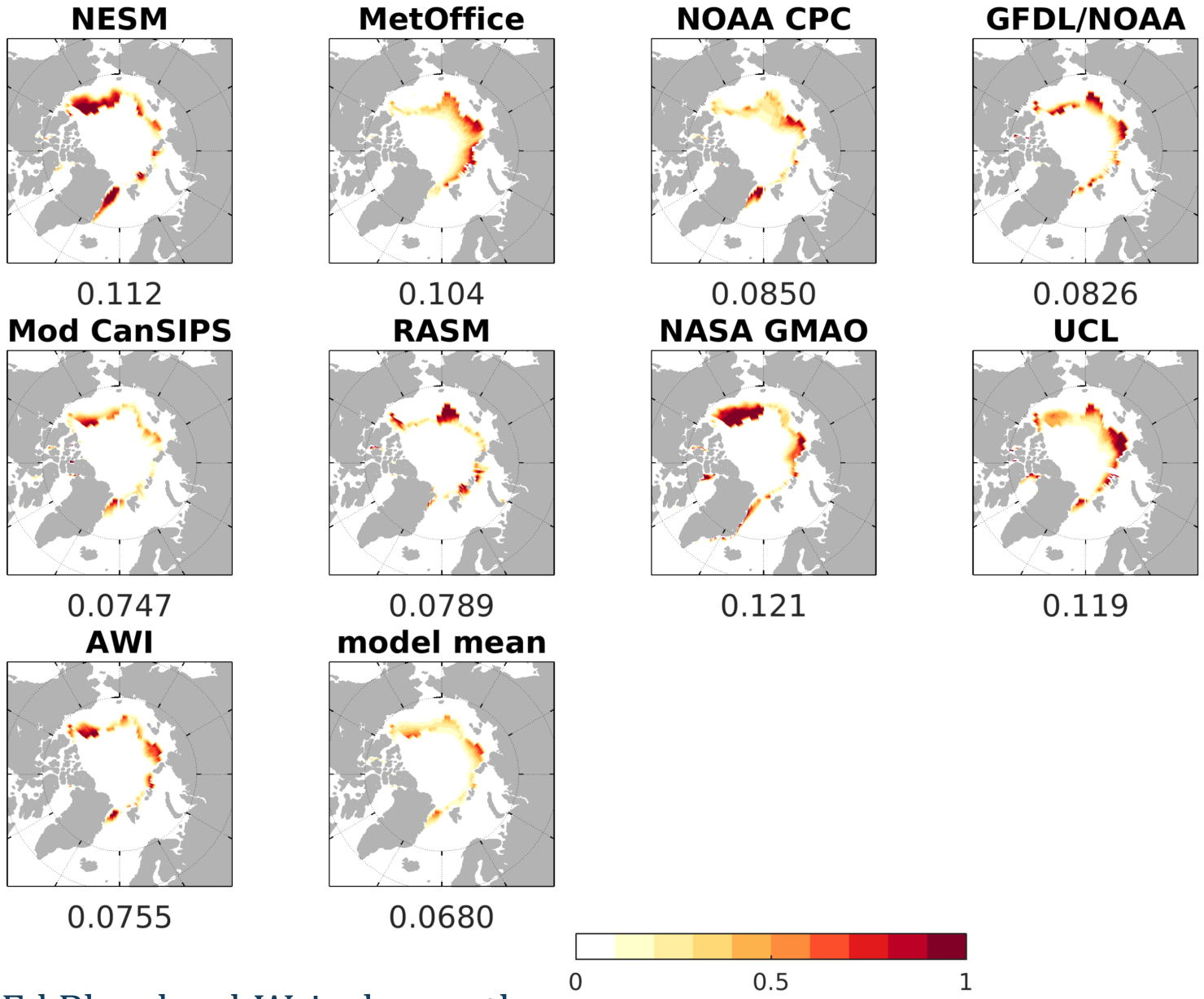
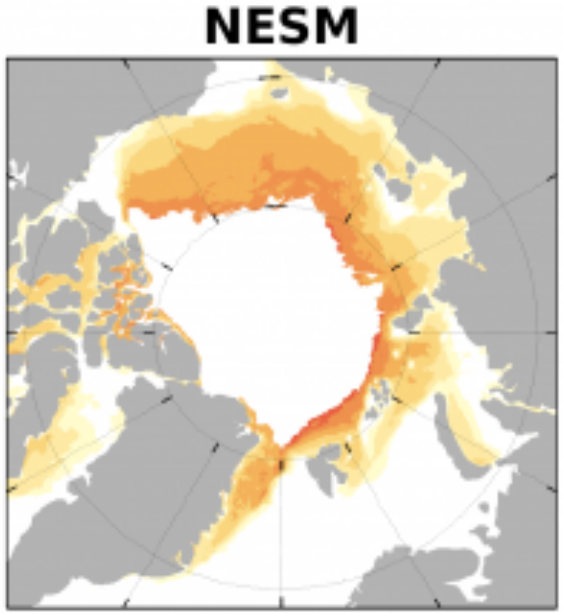
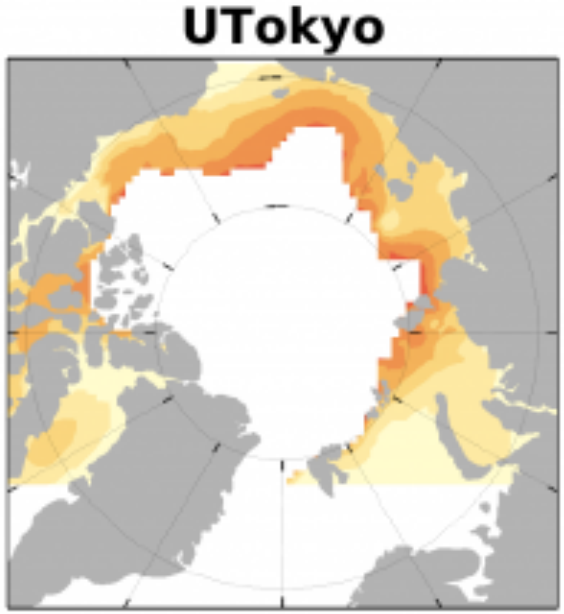
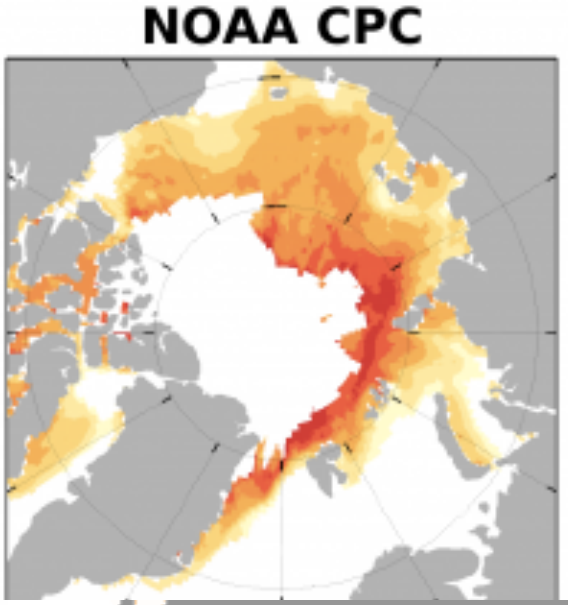


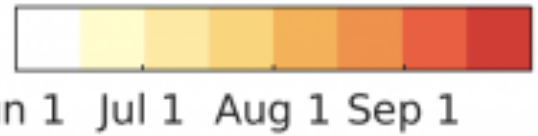
Figure from Ed Blanchard-Wrigglesworth

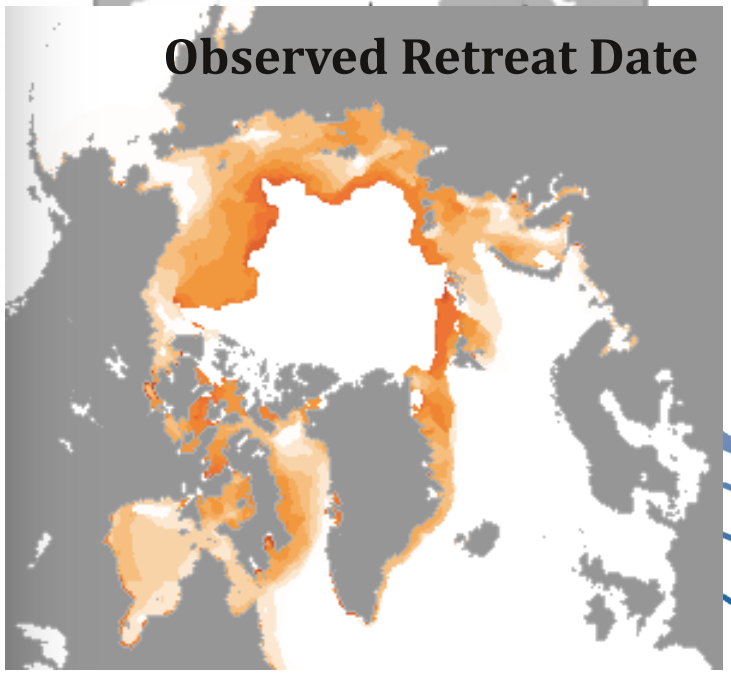
Forecasts of ice free date











[E Blanchard-Wrigglesworth]

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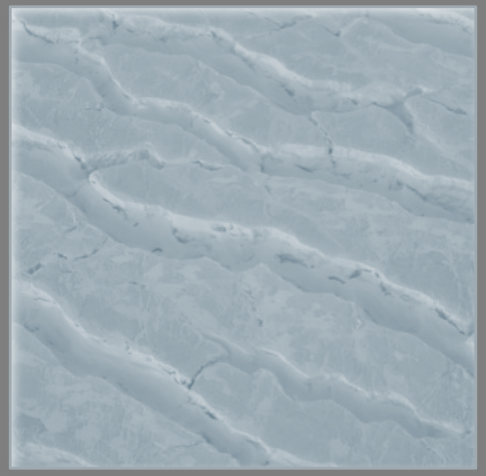

Performance of the 2017 Antarctic maximum forecasts

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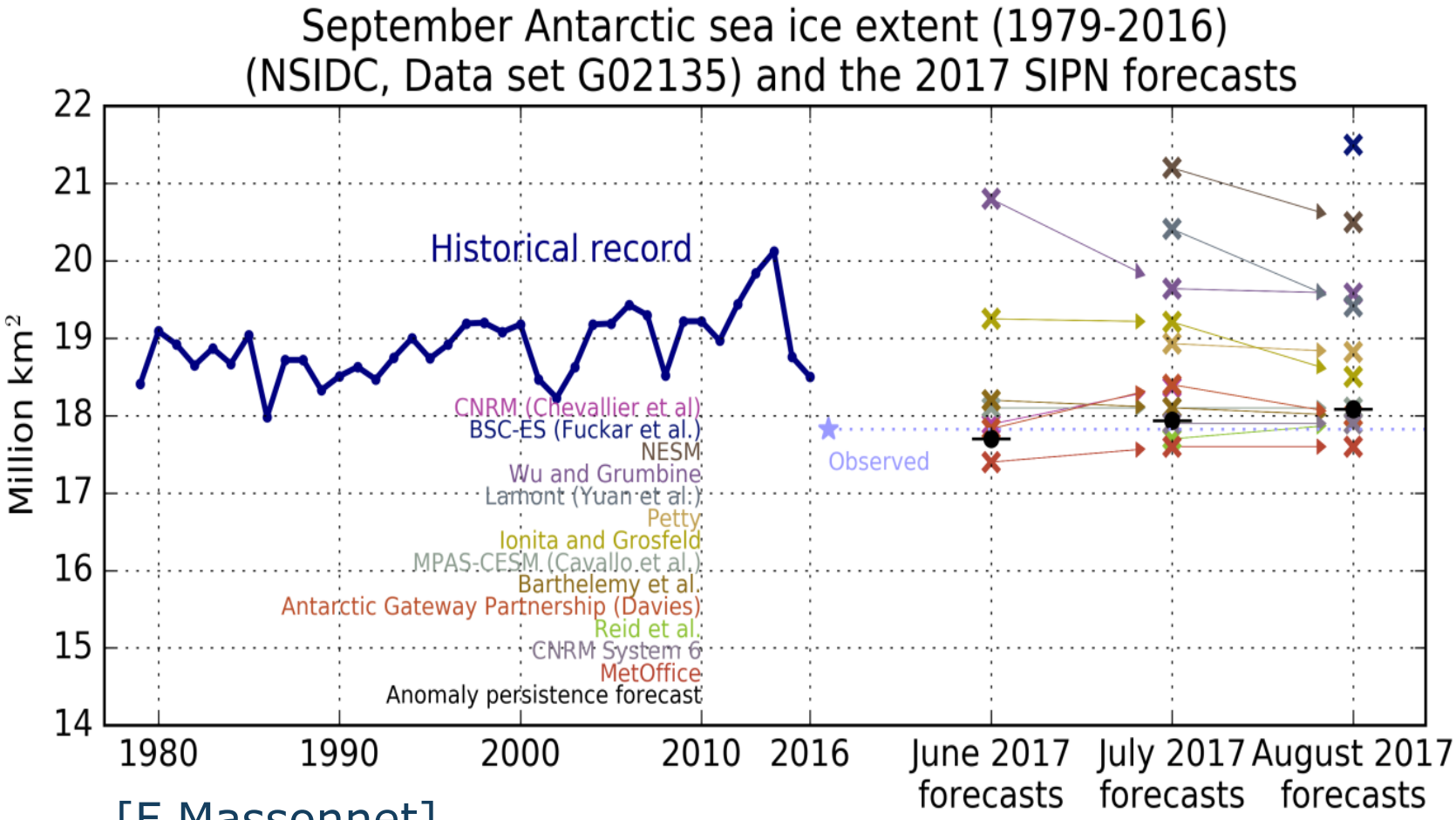
Antarctic Maximum Outlooks



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