



## Supplement of

## Changes in sea-surface temperature and atmospheric circulation patterns associated with reductions in Arctic sea ice cover in recent decades

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## Supplemental materials

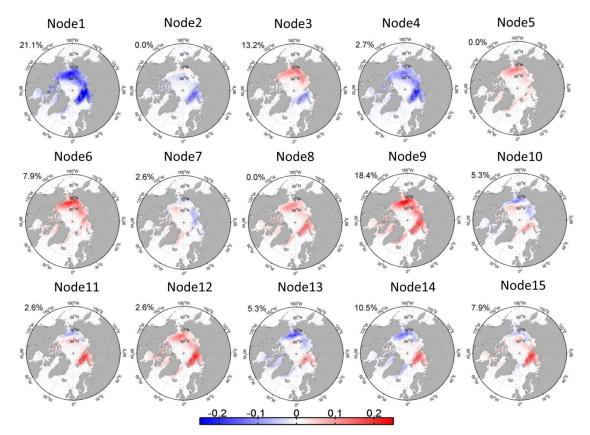


Figure S1 The SOM patterns of the anomalous autumn (September-November) Arctic sea ice concentration for a 3×5 grid for the 1979-2016 period. The percentage at the top left of each plot indicates the frequency of occurrence of the pattern.

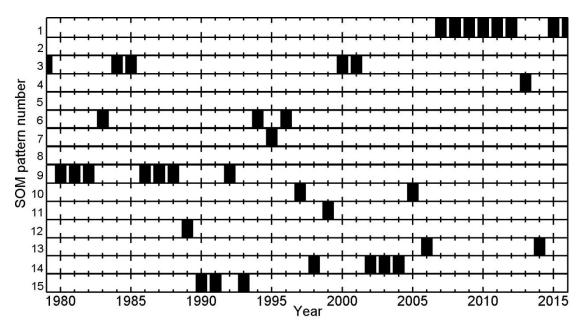


Figure S2. Occurrence time series for each SOM pattern in Figure S1.

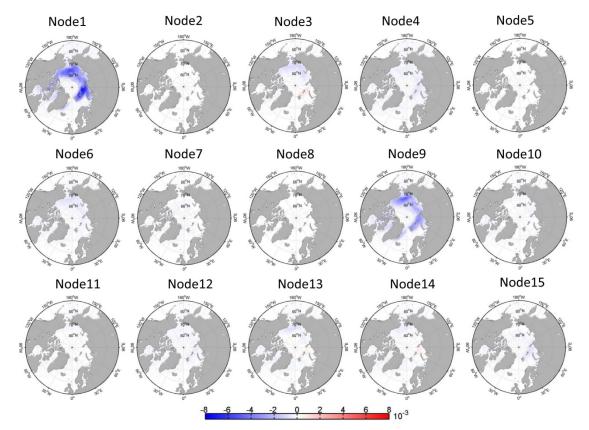


Figure S3. Trends in the anomalous autumn Arctic sea ice concentration explained by each SOM pattern (Units:  $yr^{-1}$ ).

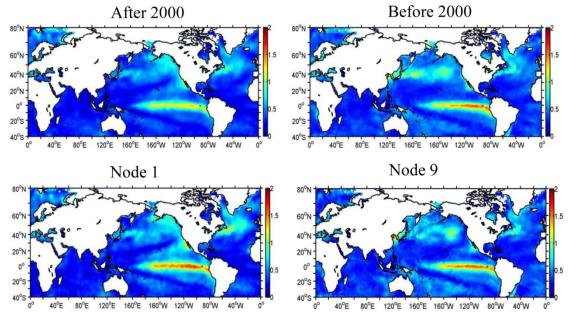


Figure S4 The standard deviations of composite SST for Nodes 1 and 9, and after and before 2000.

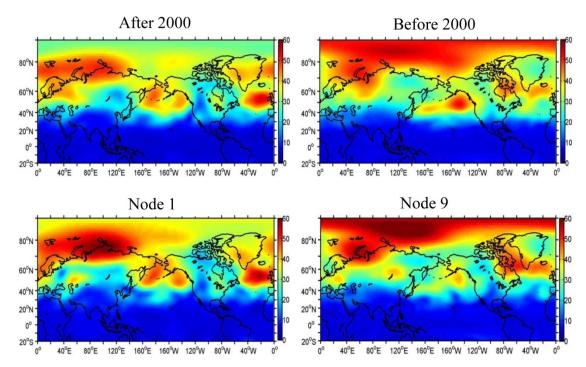


Figure S5 The standard deviations of composite anomalous 500-hPa geopotential height for Nodes 1 and 9, and after and before 2000.

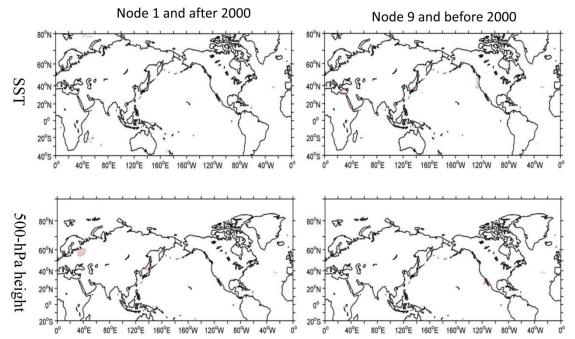


Figure S6 The significant test of standard deviation for SST and anomalous 500-hPa geopotential height between Node 1 and after 2000, and Node 9 and before 2000 using the F-test. Red dots denote above 95% confidence level.