

Supplementary material:

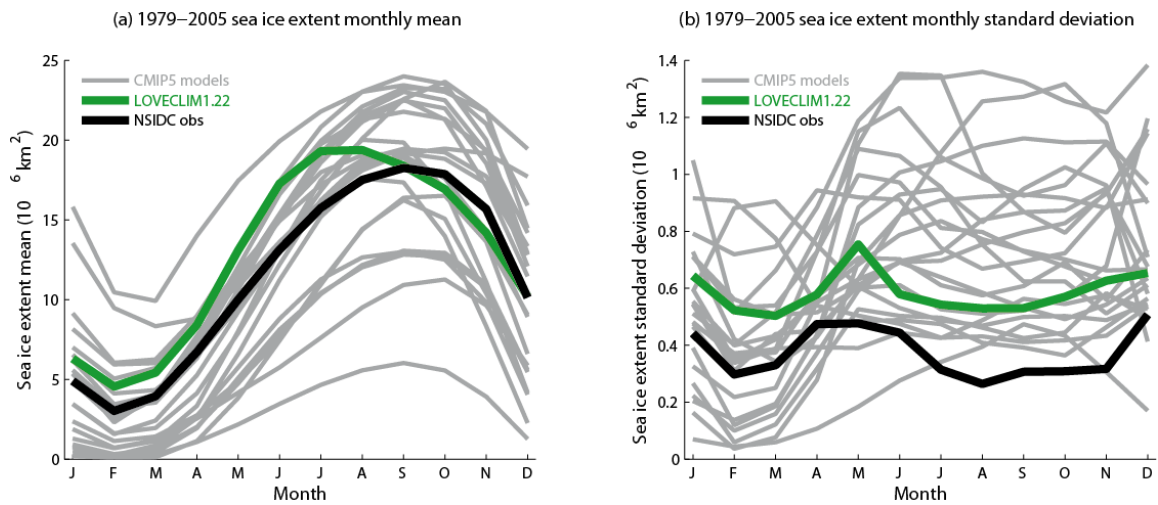


Figure S1. (a) Monthly mean Antarctic sea ice extents as computed from LOVECLIM (in green) and 24 CGCMs (in grey) participating in CMIP5 (Coupled Model Intercomparison Project Phase 5) over the period 1979–2005. (b) Standard deviations of the detrended Antarctic sea ice extents as computed from LOVECLIM and the CMIP5 models over the period 1979–2005 for each month of the year. Black bold line refers to observations of Cavalieri and Parkinson (2008). This figure is adapted from Zunz et al. (2013) where the list of the models analysed can be found.

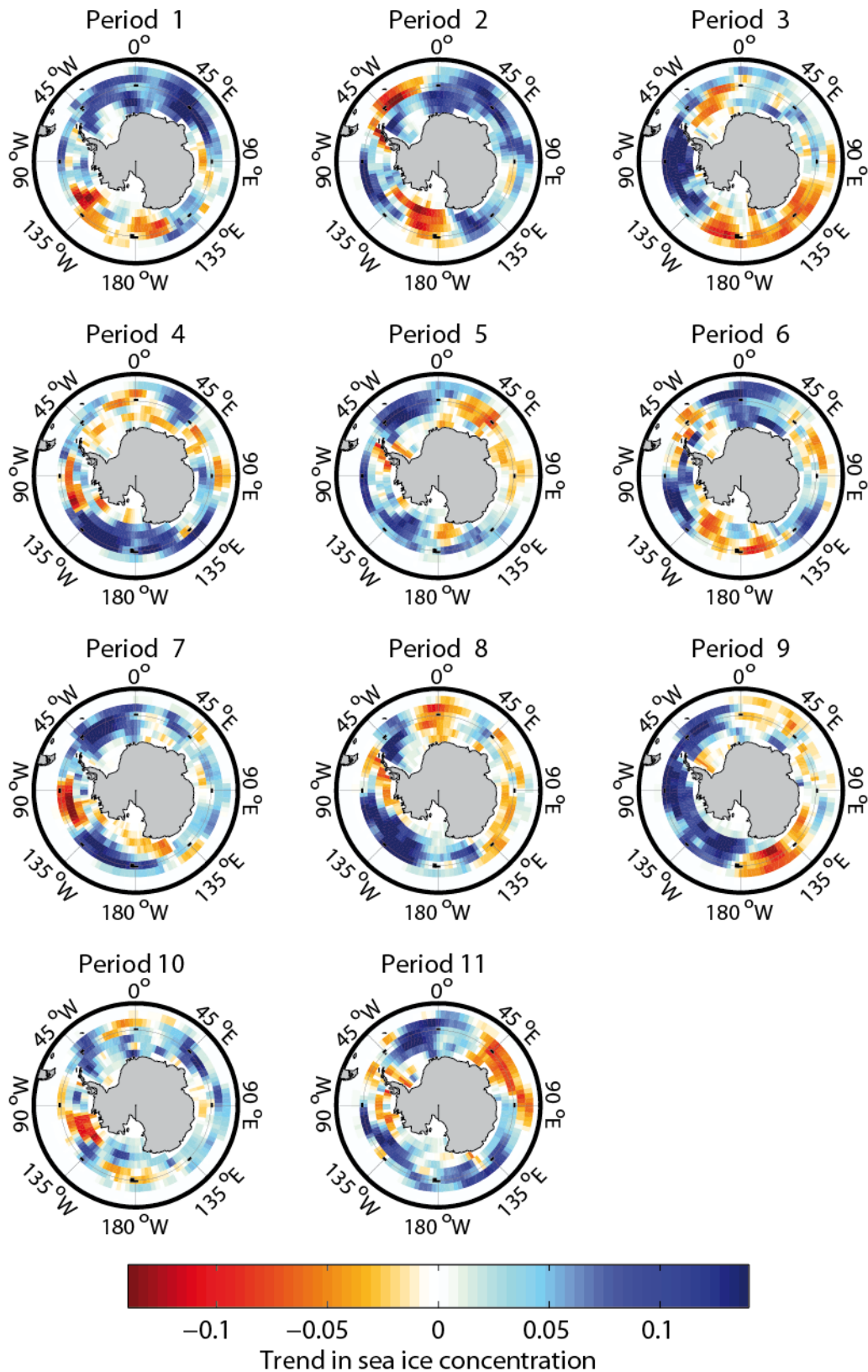


Figure S2. Trends of annual means ice concentration for the 11 periods showing a large increase in Antarctic sea ice extent scaled to represent the 30 year changes.

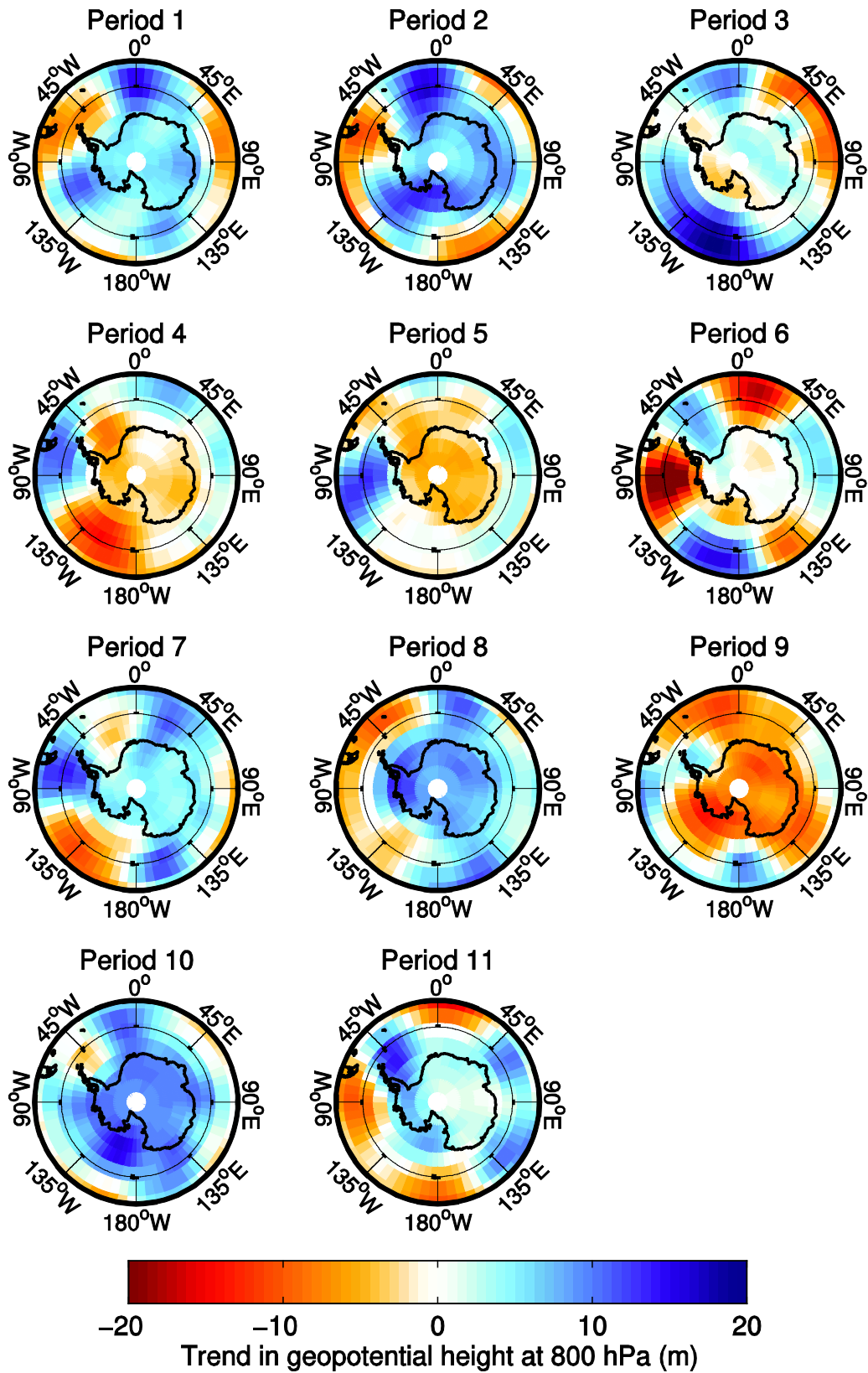


Figure S3. Trends in geopotential height at 800 hpa (m) for the 11 periods showing a large increase in Antarctic sea ice extent scaled to represent the 30 year changes.