



The forcing of Arctic Sea Ice extent anomaly on atmosphere circulation of northern hemisphere

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In this paper, the relationship of the Arctic sea Ice (ASI) Extent (ASIE) and climate anomaly in northern hemisphere are analyzed, investigating the dynamic mechanism of impacts of Arctic sea ice extent changing on climate anomaly. The result show that the remarkable correlation between ASIE and the temperature and precipitation located at mid-latitude of Northern Hemisphere through June to August (JJA) and December to January (DJF). ASIE anomaly in August-September-October (ASO) can excites two poleward stationary waves, the eastern breach is stronger than western breach. ASIE decreasing can results in geopotential height increasing around polar circle region, it is remarkable no matter on 100 hPa and 500 hPa, i.e, this decrease is deep, which also can excite similar AO pattern on stream field in summer in NH. It can link with climate anomalies attribute to AO impacts on climate.