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Title: Assessing the Influence of Regional SST Modes on the Winter Temperature in China
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Abstract:
 This study investigates the influence of different sea surface temperature (SST) modes on the winter temperature in China using the Generalized Equilibrium Feedback Assessment (GEFA). It is found that the second EOF mode of winter temperature in China during 1958-2010 shows a typical northeast-southwest (NE-SW) pattern, which is a major spatial mode of China winter temperature at interannual scales. The winter temperature of NE-SW pattern is forced mainly by SST modes in the tropical Pacific and Atlantic. For 2009/2010, the tropical Pacific El Niño mode and tropical Atlantic tripole mode have the largest contribution to the response. The physical mechanism of cold-northeast/warm-southwest (CNE-WSW) pattern is also explained in terms of GEFA of the responses of the atmospheric circulation. The northerly flow at low level transports cold air to north and northeast China, resulting in lower temperature there. Meanwhile, the anomaly meridional wind advects warm air from the southern oceans to southwest China, leading to warming there.
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