

On the robustness of ENSO teleconnections

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Abstract

Using observations covering the last 128 years we show that apparent changes in ENSO (El Niño-Southern Oscillation) teleconnections can be explained by chance and stem from sampling variability. This result is backed by experiments in which an atmosphere model is driven by 123 years of observed sea surface temperature. The possibility of ENSO teleconnection changes in a warming climate is further investigated using coupled GCMs driven by past and projected future greenhouse gas concentrations. These runs do not exclude physical changes in the teleconnection strength but do not agree on their magnitude and location. If existing at all, changes in the strength of ENSO teleconnection, other than obtained by chance, are small and will only be detectable on centennial time scales.