



ENSO Modoki signal in the stratosphere

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ENSO is known to be the largest source of interannual variability in the tropical troposphere. However, since 1979, the variability in the Tropical Pacific is associated not only to the canonical ENSO, but also to a new phenomenon called ENSO Modoki (Kao and Yu 2009, Ashok and Yamagata 2009). This new phenomenon has different frequency, magnitude and localization of the sea surface temperature anomalies in the Tropical Pacific, leading to different tropospheric teleconnection patterns. In the stratosphere, the canonical ENSO appears as an anomalous warming over the Northern Hemisphere polar cap during boreal winter due to the anomalous propagation and dissipation of ultralong Rossby waves at midlatitudes. We have characterized the signal of the new ENSO Modoki in the stratosphere, comparing with the canonical ENSO, by using the fully coupled chemistry climate Whole Atmosphere Community Climate Model (WACCM3.5). The results show a significant warming over the SH polar cap in the stratosphere in boreal winter which propagates downwards in early spring; not seen during the canonical ENSO events. In the Northern Hemisphere, however, the signal is hardly significant and much weaker than during the canonical ENSOs. We will show that these differences seem to be related to changes in the tropospheric teleconnections and tropical convection associated with both types of events.