



Increasing intensity of El Niño in the central equatorial Pacific

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El Niño events, capable of affecting global weather patterns, have important socioeconomic implications. Knowledge about the behavior of El Niño is important to the understanding its dynamics, its relation to multi-decadal variability and climate change, its prediction, and its impacts. Before the 1990s, most of the El Niño events were of the classical type where the maximum anomaly of sea surface temperature (SST) occurred in the eastern-equatorial Pacific. In the past two decades, however, there have been frequent occurrences of a new type of El Niño that has its maximum SST anomalies in the central equatorial Pacific (CP). Using satellite observations, we show that the intensity of El Niño events in the CP region has almost doubled in the past three decades, with the strongest warming occurring in 2009-10. This trend is related to the increasing intensity as well as frequency of CP El Niño events. While SST in the CP region during El Niño years has been increasing, those during neutral and La Niña years have not. Therefore, the well-documented warming trend in the CP region, attributed by some to the effects of global warming on background SST, is primarily a result of more intense El Niño events at least for the past three decades.