



Impact of decadal variability on ENSO diversity, and its impacts on rainfall

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El Niño-Southern Oscillation (ENSO) is a naturally occurring mode of tropical Pacific variability, with global impacts on society and natural ecosystems. While it has long been known that El Niño events display a diverse range of amplitudes, temporal evolution and spatial patterns, the realization that ENSO impact can be highly sensitive to this event-to-event diversity is driving a renewed interest in the subject. However, very little has been done in understanding the potential impact of decadal modes of Pacific sea-surface temperature (SST) on this ENSO diversity, as well as on its impacts on rainfall worldwide.

Using several ENSO indices, describing both central and eastern Pacific events, and indices portraying the Pacific Decadal Oscillation (PDO) and the Interdecadal Pacific Oscillation (IPO) derived from three different observed SST data sets, this study aims at assessing the impact of decadal variability on ENSO diversity and its impacts on rainfall at the global scale. The results are then compared with those obtained in GFDL-CM3 pi-control run, which shows good performance in reproducing impact of Pacific SST variability at interannual and decadal timescales.