



Why El Nino is stronger than La Nina?

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Using the global ocean assimilation data and TOGA-TAO data, the thermal budget analysis for the tropical Pacific SST is performed. The meridional thermal flux by the tropical instability wave (TIW) during the La Nina period becomes stronger, while it during the El Nino is suppressed. Thus, the heat flux by the TIW in the ocean mixed layer is negatively correlated to the tropical eastern Pacific sea surface temperature anomalies, inferring the negative feedback effect with respect to ENSO development. The effect of the TIW is incorporated into the two-stripped down version of the ENSO model. From the model results, it is found that the asymmetric thermal heating by the TIW can induce the El Nino-La Nina asymmetry.