

The Tropical cyclones abrupt change in the Western North Pacific using the TC genesis index discussion

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The Tropical cyclones (TCs) genesis indices was used to discuss the abrupt change of Tropical cyclone genesis frequency (TCGF) in the Western North Pacific (WNP) from 1979 to 2014 and to discuss the factors of abrupt change. This study shows that the TC genesis indices often used in recent studies does not reflect the abrupt change of TCGF. We also modify the dynamics and thermal effects to propose a new genesis index $M\alpha\chi$ GPI, which is consistent with the observed dataset regardless of spatial distribution or time series. The index uses the method proposed by previous studies to conduct a budget analysis. To discuss the contribution of large-scale environmental parameters to TCGF abrupt change.

Keywords: tropical cyclone genesis frequency, abrupt change, western North Pacific