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Plain Language Summary : In the Southwest Pacific, the annual number of tropical cyclones (TCs) and TC days decreased over the study period, while the numbers of stronger TCs slightly increased, and stronger TC days increased. The highest annual lifetime-maximum intensity and average annual lifetime-maximum intensity also increased. Small trends were found in genesis latitude, V_{max} latitude, highest intensification rate, accumulated cyclone energy (ACE), and power dissipation index (PDI) suggesting that the Southwest Pacific region is likely to remain most vulnerable to such TC impacts at irregular interannual periods.

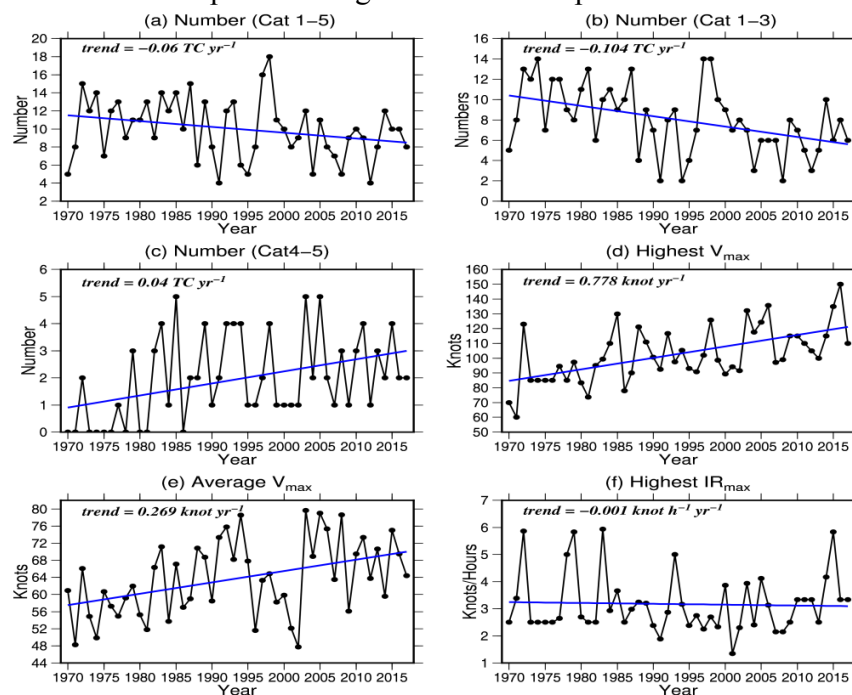


Fig. 1. Interannual variation in various metrics for TC activity during 1970–2017. (a) Number of TCs, (b) number of weaker TCs (Cat 1–3), (c) number of stronger TCs (Cat 4–5), (d) highest annual lifetime-maximum TC intensity (\hat{V}_{max} ; knots), (e) average annual lifetime-maximum intensity (\bar{V}_{max} ; knots), and (f) highest annual lifetime-maximum intensification rate (\widehat{IR}_{max} ; knots h^{-1}). The blue line shows the linear trend, and the number in the top left corner is its slope.

- TC activity in the Southwest Pacific are somewhat consistent with theoretical expectations of the change in TC activity under climate change, particularly in TC overall frequency and highest annual lifetime-maximum TC intensity.
- The latitudes of both TC genesis and V_{max} remained almost unchanged over the 1970–2017 study period, which suggests little shift in the dominant areas affected by TCs.
- The Sea Surface Temperature (SST) may contribute to the uppermost TC intensity and fewer TC days.