

Kawabata, Y., U. Shimada and M. Yamaguchi, 2023: The 30-year (1987-2016) trend of strong typhoons and genesis locations found in the Japan Meteorological Agency's Dvorak reanalysis data. *J. Meteor. Soc. Japan*, **101**, 435-443.

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Plain Language Summary: The trend of strong typhoons in the western North Pacific over the recent 30 years was analyzed using the Dvorak reanalysis data from 1987 to 2016 produced by Japan Meteorological Agency. The strong typhoons were defined in this study as tropical cyclones (TCs) equivalent to category 4 and 5 on the Saffir-Simpson scale. A trend analysis for strong typhoons showed no statistically significant increasing trend with large inter-annual and multi-year scale variations.

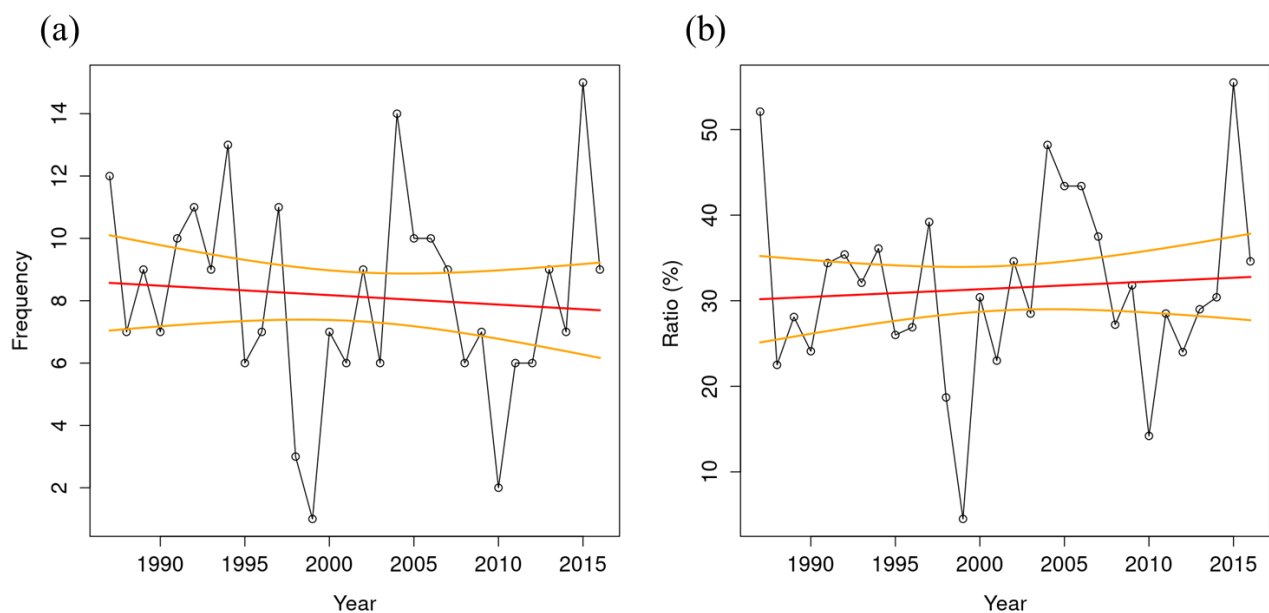


Figure 1. Time series of (a) the number of strong typhoons with a lifetime maximum CI number of 6.0 or higher and (b) the ratio of strong typhoons to all TCs in each year for the Dvorak reanalysis. The linear regression and the 90 % confidence interval around the linear regression line are shown in red and orange, respectively.

- Dvorak intensity (i.e., Current Intensity (CI) number) reanalyzed by the Dvorak technique using geostationary satellite imagery is considered to be temporally homogeneous.
- No statistically significant increasing trend in strong typhoons is analyzed, while the spatial distribution of the genesis locations of TCs, which could influence whether or not they develop into strong typhoons, varied locally during the analysis period.
- The results with the world's first Dvorak reanalysis data highlight the need for high quality and temporally consistent datasets for climatological studies, as well as for careful interpretation of trend analysis results seen in previous studies.