Decadal-scale variation of the typhoon recurvature latitude

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The long-term variation of typhoon recurvature latitude was estimated based on the analysis of typhoon trajectory patterns via the Gaussian process regression technique. Since typhoon trajectory patterns affect the risks of typhoon-related hazards, it is important to model its variation. In this study, long-term variations in typical typhoon trajectory patterns were analysed simultaneously with seasonal variations. The results indicate decadal or longer meridional oscillations of typhoon recurvature points that are distinguishable from seasonal variations. Background wind field variations seemed to be consistent with the variations of the typhoon latitude recurvature after 1990, but the correspondence was poor before 1990. These results suggest that for at least the two decades after 1990, the typhoon recurvature latitude was associated with a long-term oscillation mode. The poor correlation before 1990 might suggest that meridional variations of the typhoon recurvature latitude were primarily related to central Pacific rather than the eastern Pacific warming. However, further investigation will be required to attain a conclusive answer.

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