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Interagency discrepancies in tropical cyclone intensity estimates over the western North Pacific in recent years

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This study investigates interagency discrepancies among best-track estimates of tropical cyclone (TC) intensity in the western North Pacific, provided by the Joint Typhoon Warning Center (JTWC), the China Meteorological Administration (CMA), and the Regional Specialized Meteorological Center (RSMC) Tokyo during 2013–2019. The results reveal evident differences in maximum wind speed (MSW) estimates, where linear systematic differences are significant. However, the Dvorak parameter (CI) numbers derived from the MSWs reported by the three agencies are internally consistent. Further analysis suggests that the remained CI discrepancies are related to differences in the estimation of intensity trends, initial intensities, and TC positions among these datasets. In addition, the CI estimates provided by the JTWC for TCs over the open ocean are generally higher than those reported by the CMA and RSMC. However, the CMA (RSMC) tends to estimate stronger intensity for TCs in the China (Japan) mainland and coastal zone than those in the open ocean with the same intensity in JTWC dataset. This pattern potentially reflects the extensive use of surface observations by these two agencies for landfalling and offshore TCs. These results may help the research community to get more accurate details about the TCs in WNP from the best track datasets of different agencies.