JTWC and JMA produce very different estimates of Typhoon strength

- Both Dvorak and Koba WPRs are inconsistent with Knaff–Zehr for stronger storms
- Koba’s pressures are good, but the winds are too weak when converted to pressure
- Dvorak’s pressures are too strong, but the winds converted to pressure are good
- This analysis supports operational practice of using Dvorak to estimate winds and then converting to pressure using Knaff–Zehr

Data & Methods

Reconnaissance data
- Obtained from JTWC F-Decks for 1978–1987
- Using pressure calculated from minimum flight-level height

HURSAT-ADT
- ADT algorithm applied to HURSAT data (see Kossin et al. 2013)
- Only uses infrared data from geostationary satellites
- May underestimate intensities, esp. for storm with developing eyes or with very small eyes

Match aircraft pressure with nearest HURSAT-ADT fix within 3 hours
- Koba et al. (1991) manually analyzed 855 fixes for 50 storms
- Our method produces 1972 fixes from 163 storms

Glossary and References

JTWC: Joint Typhoon Warning Center
JMA: Japan Meteorological Agency
ADT: Advanced Dvorak Technique

References: