

My research interests are mainly in mesoscale and synoptic meteorology and focus on hazardous precipitation systems and severe weathers, such as: typhoons (tropical cyclones), various mesoscale convective systems (MCSs) in the Mei-yu season, and severe local storms. I am also interested in issues related to numerical weather prediction (NWP) and the application of artificial intelligence (AI) in its decision-making process.

Techniques used in study

Cloud-resolving model (CRM); mesoscale model; large-scale parallel supercomputers (e.g., Taiwan 1, NTNU HPC); model simulations and sensitivity tests; gridded datasets for analysis; potential vorticity (PV) inversion; diagnostic analysis.

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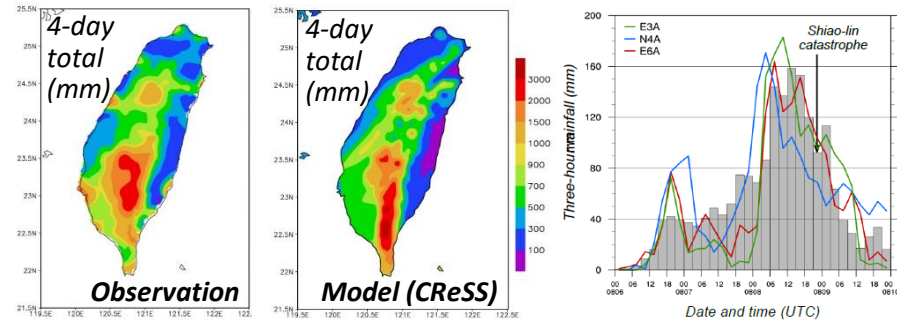
Background:

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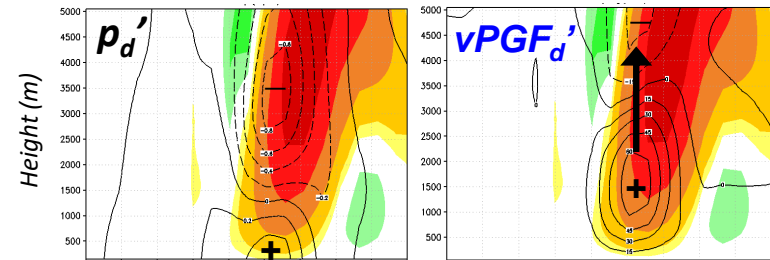
Funding: Ministry of Science and Technology



Model simulations of Typhoon Morakot (2009) and its rainfall



Back-building and merging of convective cells inside rainband



Publications

- **Wang, C.-C.***, S.-K. Ma, and R. H. Johnson, 2020: A numerical study on the influences of Sumatra topography and synoptic features on tropical cyclone formation over the Indian Ocean. *Mon. Wea. Rev.*, 148, 2777-2799.
- **Wang, C.-C.**, L.-S. Tseng*, C.-C. Huang, S.-H. Lo, C.-T. Chen, P.-Y. Chuang, and N.-C. Su, 2019: How much of Typhoon Morakot's extreme rainfall is attributable to anthropogenic climate change? *Int. J. Climatol.*, 39, 3454-3464.
- Kuo, H.-C., S. Tsujino, C.-C. Huang, **C.-C. Wang***, and K. Tsuboki, 2019: Diagnosis of the dynamic efficiency of latent heat release and the rapid intensification of Supertyphoon Haiyan (2013). *Mon. Wea. Rev.*, 147, 1127-1147.

