

Huang, W.-R., P.-H. Huang, Y.-H. Chang, C.-T. Cheng, H.-H. Hsu, C.-Y. Tu, and A. Kitoh, 2019: Dynamical downscaling simulation and future projection of extreme precipitation activities in Taiwan during the Mei-Yu seasons. *J. Meteor. Soc. Japan*, **97**, 481-499. <https://doi.org/10.2151/jmsj.2019-028>

Plain Language Summary: This study investigates the dynamical downscaling simulation and future projection of extreme precipitation activities (including intensity and frequency) in Taiwan during the Mei-Yu seasons (May and June). The future projections show that extreme precipitation will become more frequent and more intense over western Taiwan, but less frequent and less intense over eastern Taiwan. Further examinations of the significance of the projected changes in extreme precipitation that affect the agriculture regions of Taiwan show that the southwestern agriculture regions will be affected by extreme precipitation events more frequently and more intensely than the other subregions.

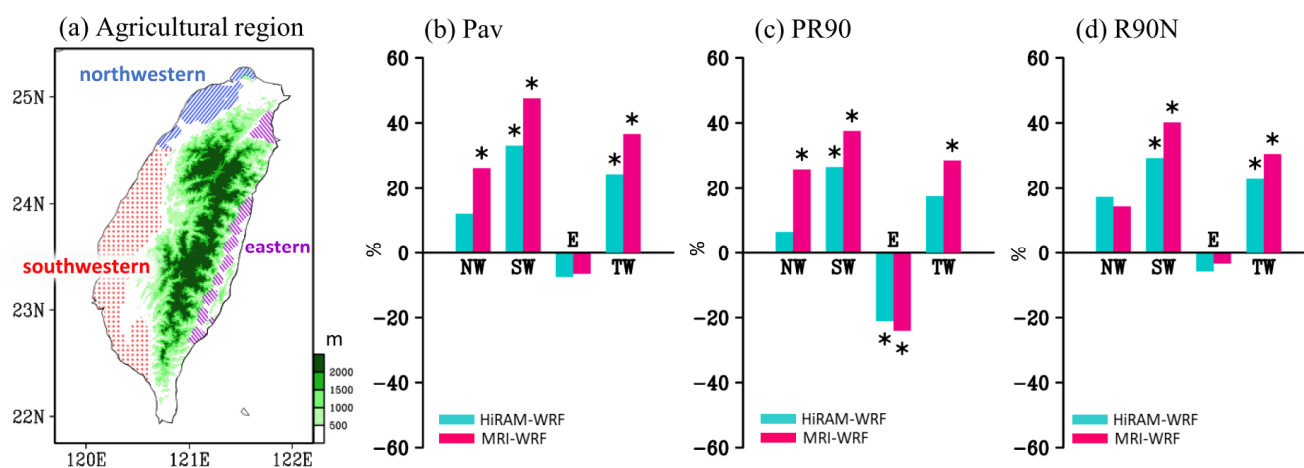


Figure 1. Plot (a) is the definition of northwestern (NW; blue slash), southwestern (SW; red dot) and eastern (E; purple backslash) agricultural region of Taiwan. Plot (b) is the percentage (%) of projected changes (future minus present) in mean precipitation (Pav), area-averaged over selected agricultural regions (NW, SW, and E) and Taiwan (TW), estimated by HiRAM-WRF and MRI-WRF models. Plot (c)-(d) is similar to plot (b), but for the extreme precipitation intensity (PR90) and extreme precipitation frequency (R90N), respectively. The change in percentage significant at 90% confidence intervals is marked by an asterisk.

- This is the first study to present the regional difference in the projected changes of Mei-Yu season extreme precipitation with a focus over the agricultural regions of Taiwan.
- The regional difference in the projected changes of extreme precipitation over Taiwan is found to be a local response to the future changes of low-level wind circulation and moisture convergence over the East-Asian monsoon region.