EVALUATION OF PRECIPITATION INDICES IN SUITES OF DYNAMICALLY AND STATISTICALLY DOWNSCALED REGIONAL CLIMATE MODELS OVER FLORIDA

Scientific Achievement

Simulation of precipitation indices, defined by the Expert Team on Climate Change Detection and indices (ETCCDI), is examined in suites of dynamically and statistically downscaled regional climate models and reanalyses over Florida.
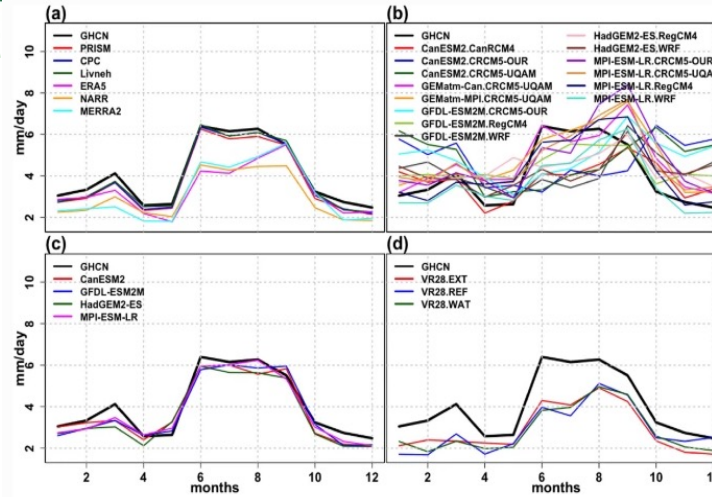
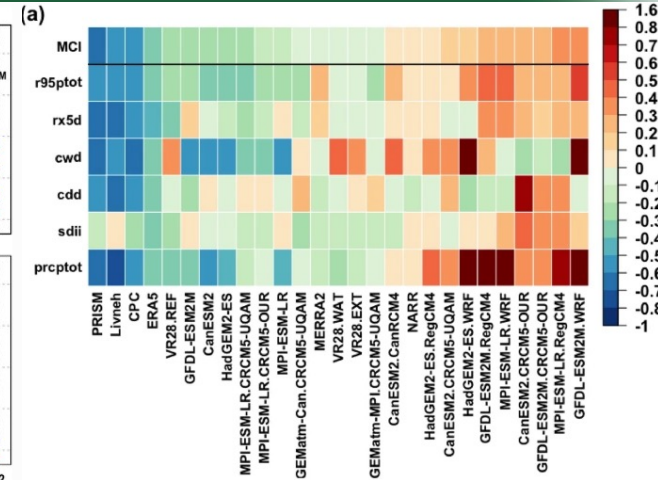

Fig.1: Annual cycle of precipitation

Fig.2:NRMSE for climatological mean of ETCCDI indices

Significance and Impact

- The reanalyses and a majority of datasets underestimate the monthly precipitation, the frequency of the extreme rainfall in summer, mean and interannual variability of mean wet-day precipitation (SDII), consecutive dry days (CDD), and overestimate consecutive wet days (CWD).

- The large performance uncertainty across models is comparable to that in the reanalyses.

Research Details

- Models' performance in simulating the observed (GHCN-Daily) mean and interannual variability of precipitation indices are estimated using the normalized root-mean-squared error (NRMSE) of climatological mean and interannual interquartile range (IQR), respectively.

- Selected indices are PRCPTOT, SDII, CWD, CDD, Rx5day, and R95ptot.

- Other observational data tested: PRISM, Livneh, CPC.

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