Intraseasonal variability of the Pacific jet is primarily composed of meridional shifts in the jet and pulses of jet core intensity (associated with zonal extension/retraction of the jet) and is known to have a substantial impact on sensible weather both within the Pacific basin and well downstream. In recent years, significant progress has been made in understanding the intraseasonal variability of the Pacific jet: however, few studies have examined intraseasonal jet variability in global climate models (GCMs). The current work investigates the accuracy of the representation of intraseasonal variability of the Pacific jet in 20th century climate simulations (20c3m) from seventeen of the models that contributed to the World Climate Research Programme’s (WCRP’s) Coupled Model Intercomparison Project phase 3 (CMIP3) multi-model dataset.

Using modeled daily zonal wind speed, a statistical approach is employed in order to compare modeled Pacific jet mean state and variability with observed jet mean state and variability as depicted in the NCEP/NCAR reanalysis. The dominant mode of variability is model-dependent and is not always consistent with observations. To further inform understanding of intraseasonal jet behavior in GCMs, exploration of storm track variability (as represented by eddy kinetic energy) is also included in the analysis. The observed relationship between jet fluctuations and storm track variability is not always well replicated, suggesting that certain GCMs are not able to accurately simulate the dynamic and energetic interactions between the Pacific jet and mid-latitude eddies in the Pacific basin.