# Supplemental Material

*Journal of Climate*
Storylines of South Pacific Convergence Zone Changes in a Warmer World
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# Supplemental Material

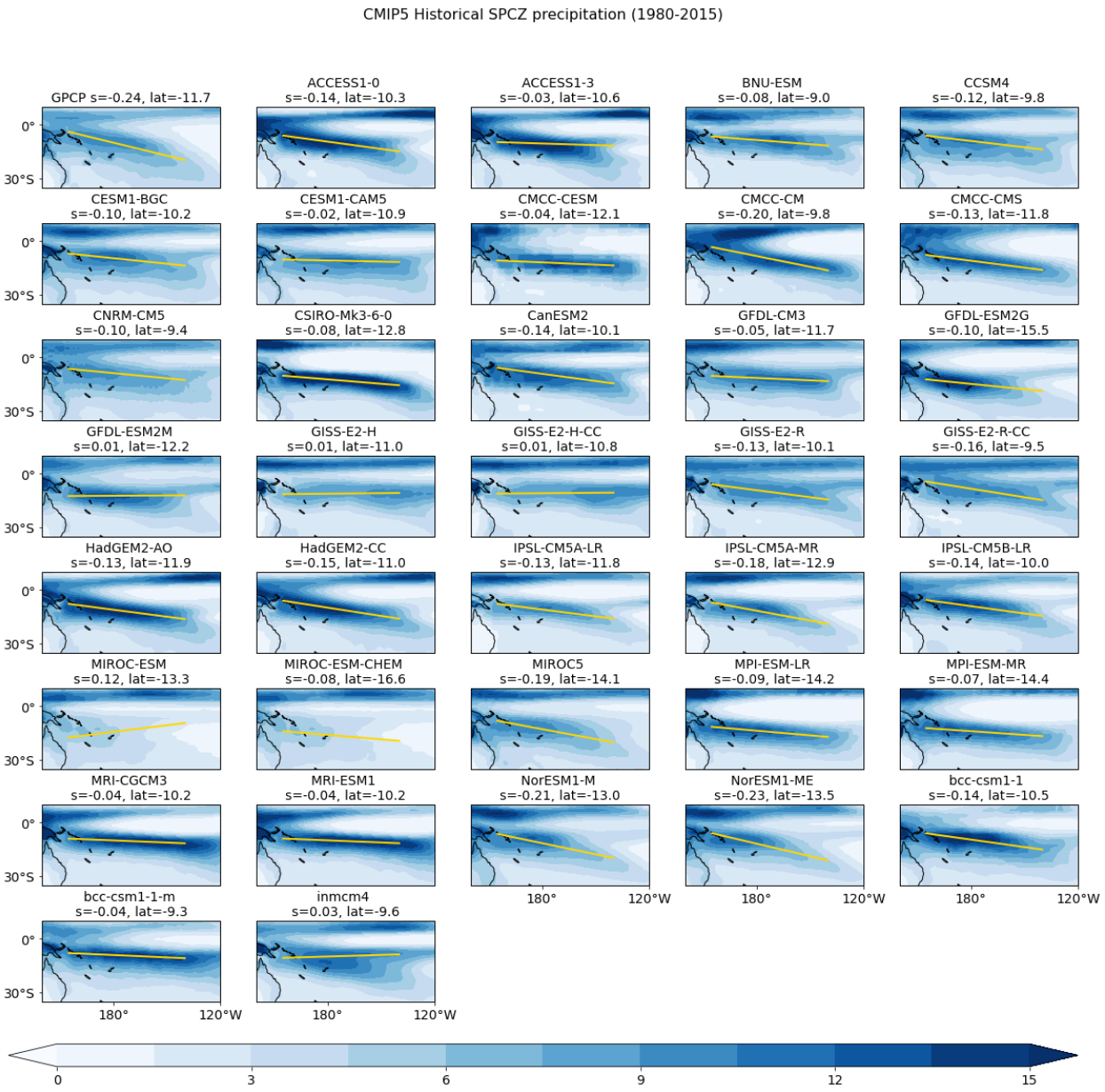


**Figure S1.** DJF precipitation climatology (mm/day) for 1980 to 2015 for GPCP observations and CMIP5 model historical simulations. The diagnosed SPCZ is shown as a yellow straight line, with the slope and position (latitude) listed above each panel.

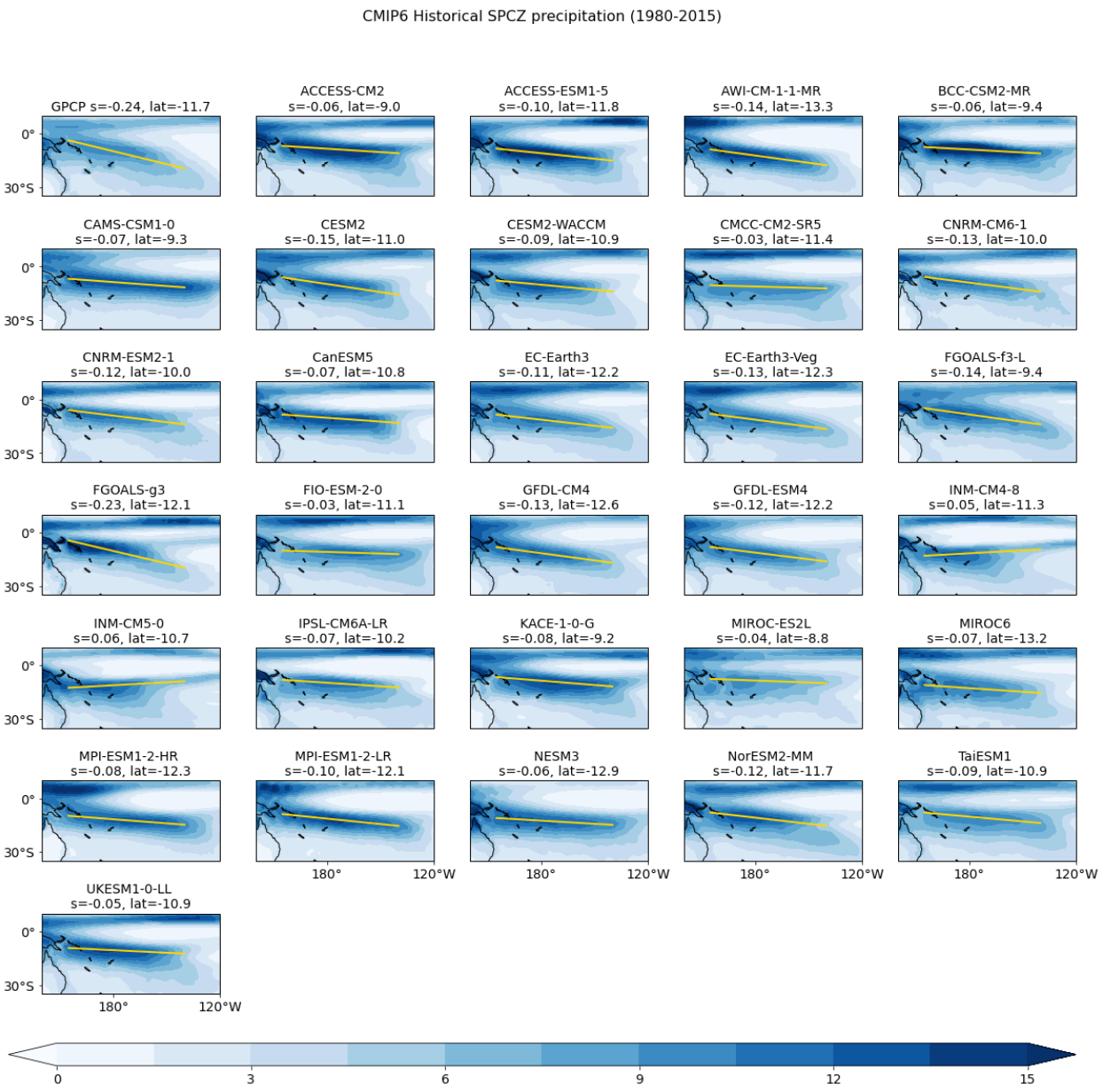


**Figure S2.** As in Figure S1, except for CMIP6 models.

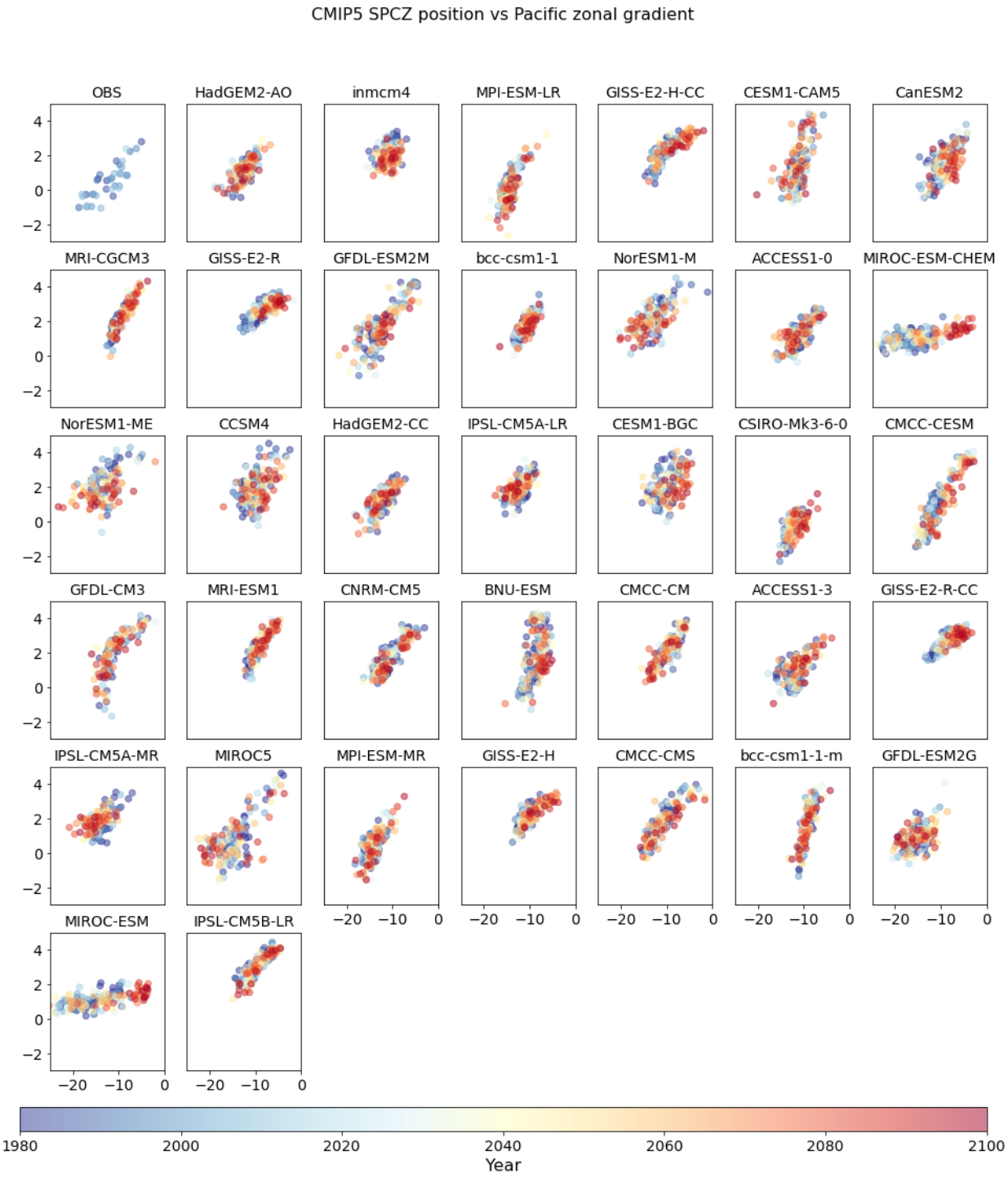


**Figure S3.** Diagnosed SPCZ position (°N; x-axis) vs Nino 3.4 index (°C, y-axis) for each year in observations (OBS) and CMIP5 models (both historical and future simulations). Color indicates year.

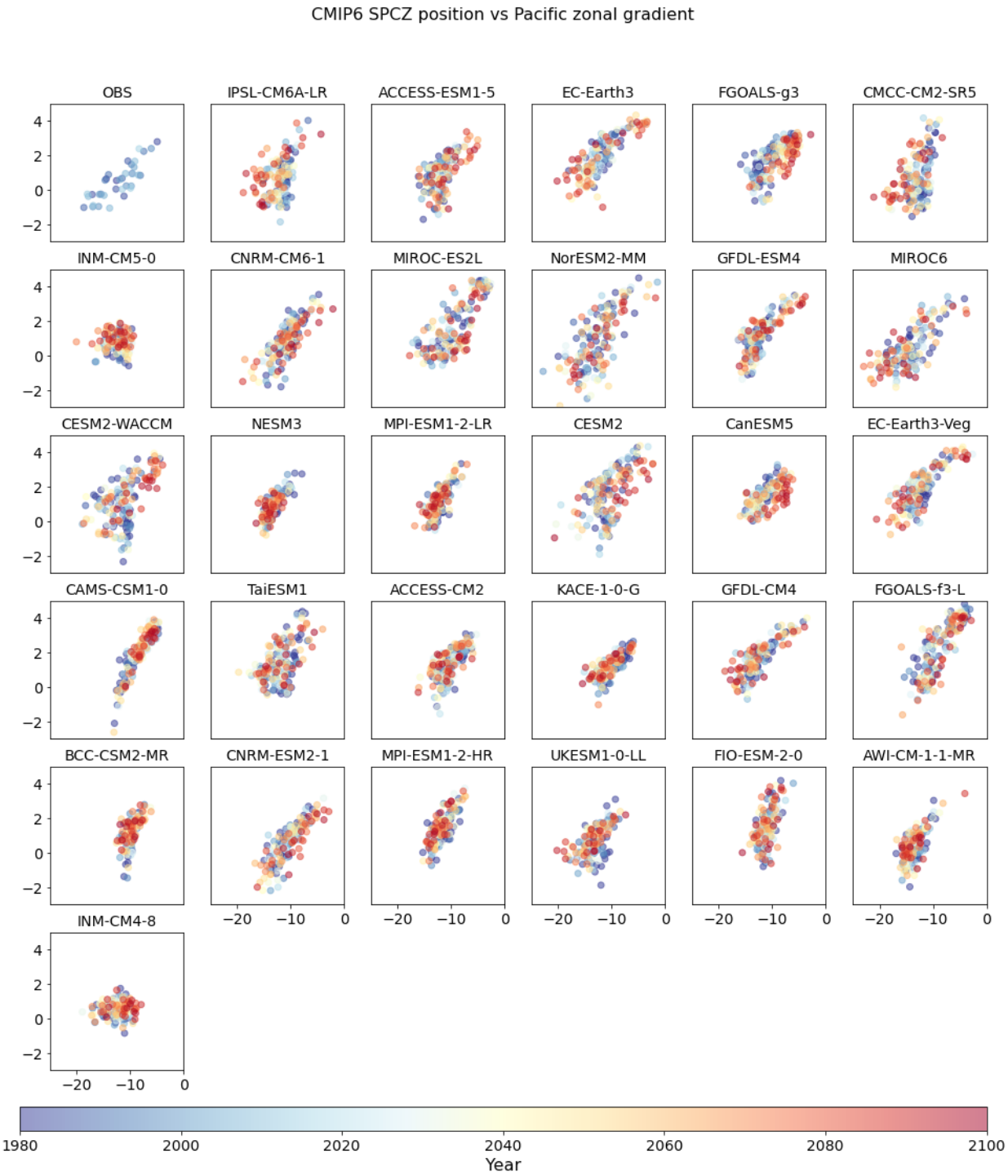


**Figure S4.** As in Figure S3, except for CMIP6 models.

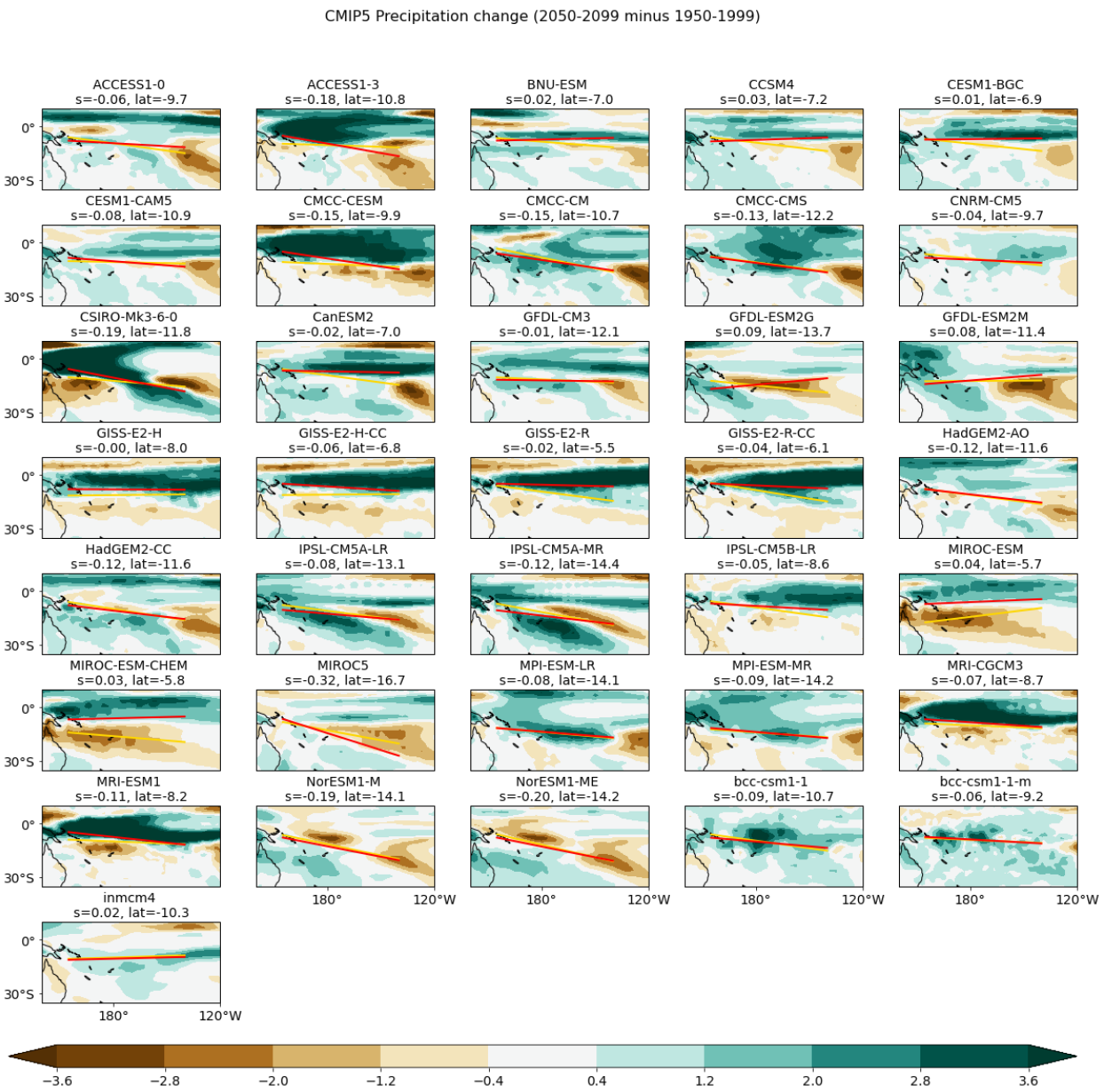


**Figure S5.** Projected change in precipitation (mm/day) in each CMIP5 model by late 21st century for the high emissions scenario. Historical and future diagnosed SPCZ lines are shown in yellow and red respectively, with the future slope and position (latitude) listed above each panel.

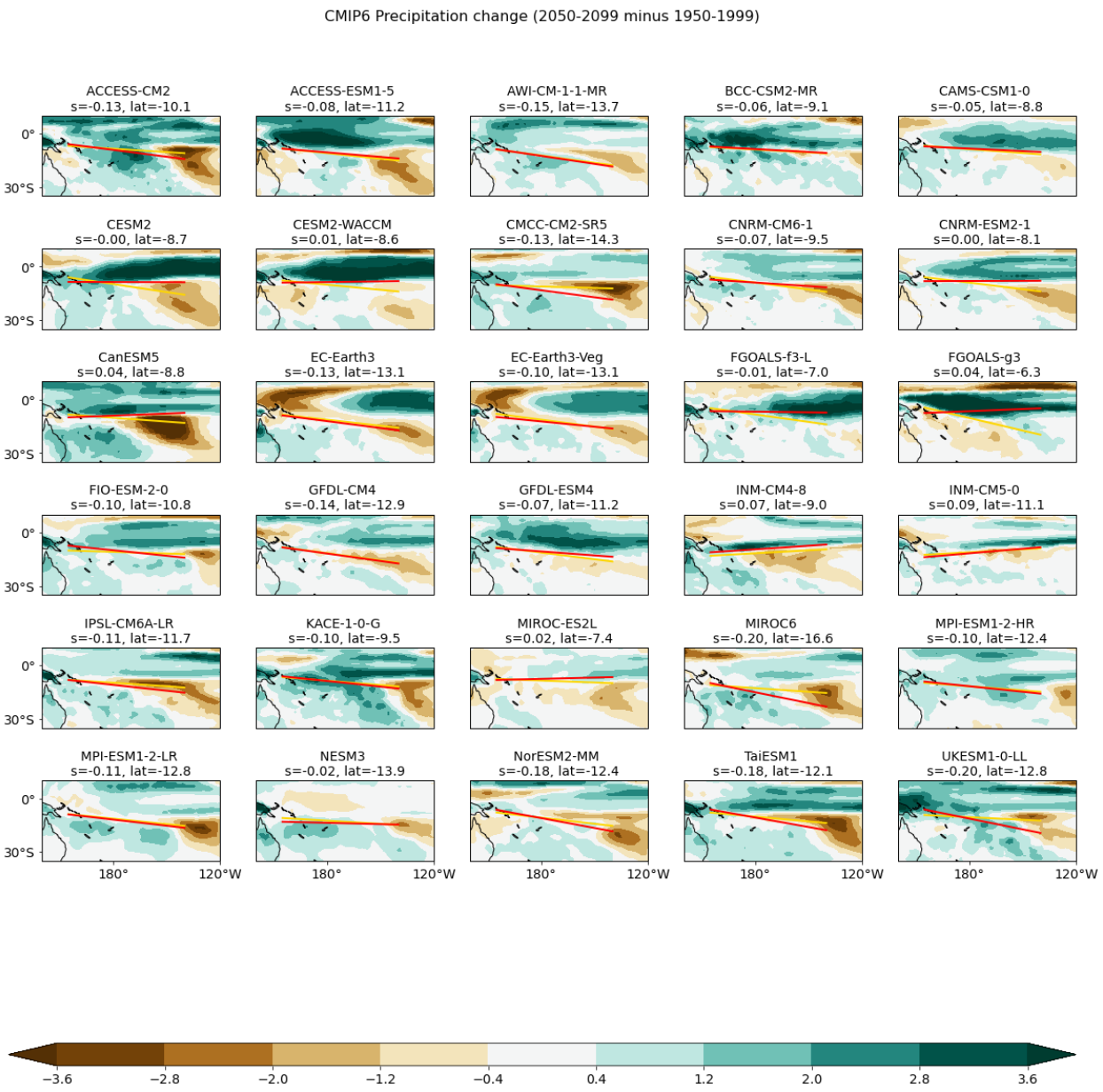


**Figure S6.** As in Figure S5, except for CMIP6 models.

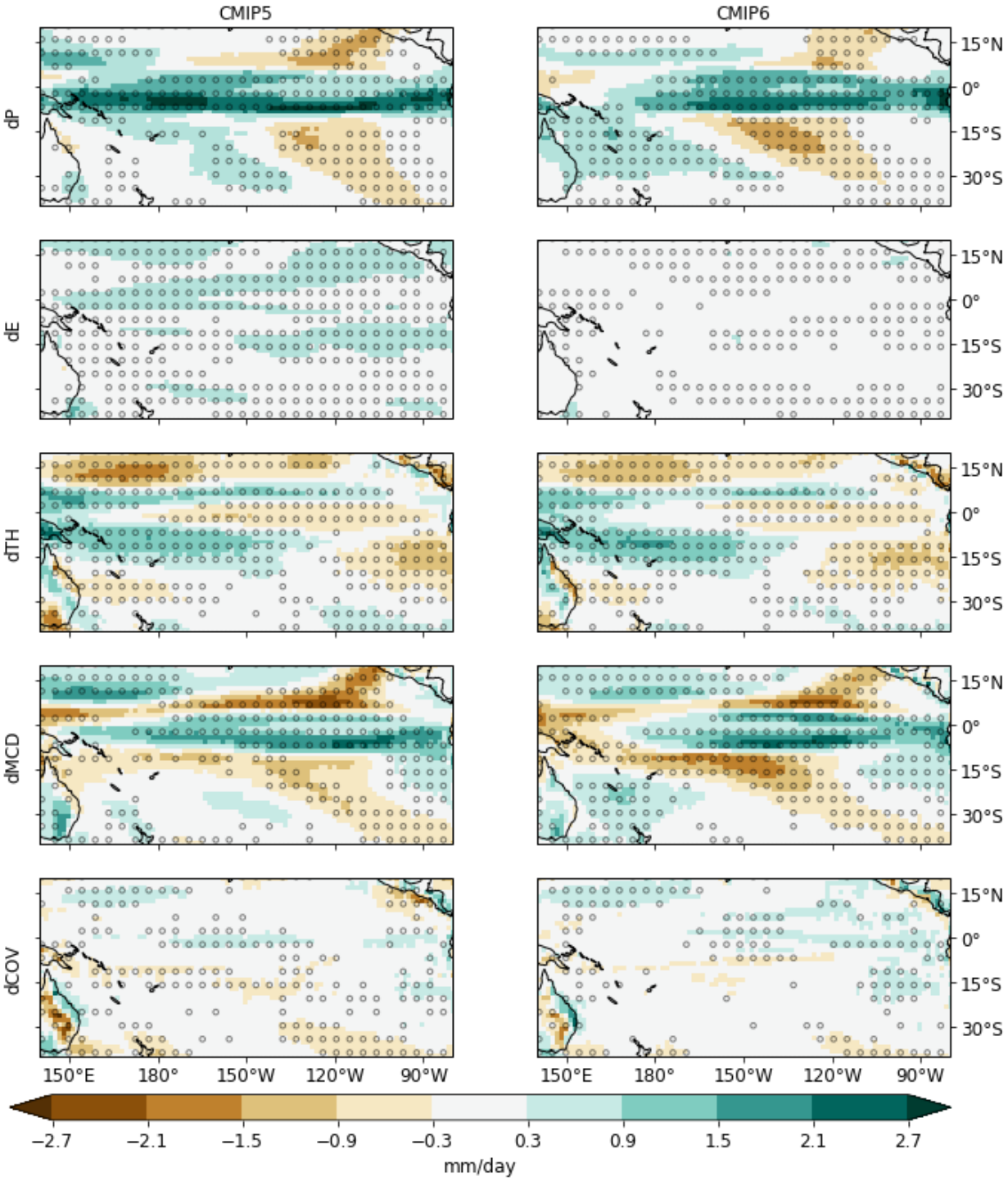


**Figure S7**. Multi-model mean precipitation changes (mm/day) for CMIP5 (left) and CMIP6 (right), as well as change in moisture budget decomposition terms for evaporation (dE), thermodynamic component (dTH), mean circulation dynamic component (dMCD) and covarying term (dCOV). Stippling indicates where greater than two-thirds of models agree on the direction of change.