



**Supplemental Figure S1.** The black curves are the zonal averages of precipitation from Figure 7a (western hemisphere tropics; 30° N–30° S and 180°–0° W) for each reanalysis model (labeled at top) and for each season (labeled at left) over the 1981–2010 period. The gray curves show the differences of the ensemble subtracted from the reanalysis model. The thin black lines mark zero difference. The y-axes left and right represent degrees latitude.