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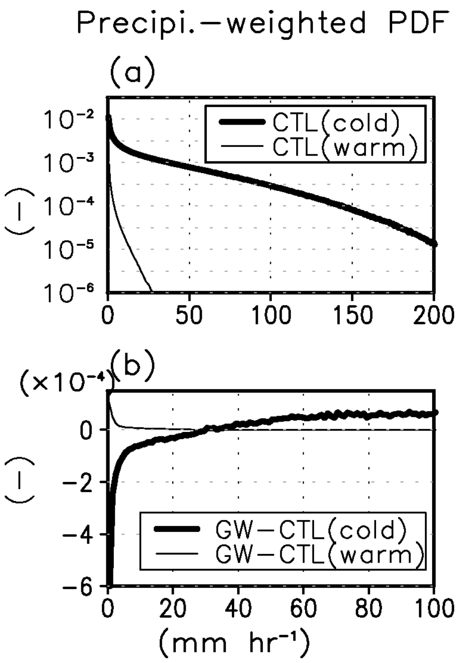

Figure 1 (left). Comparison of PDFs of surface precipitation at low latitudes over the ocean, showing (a) contributions of cold (thick line) and warm (thin line) rain to total precipitation, and (b) their responses to global warming. Values are binned every 1 mm hr^{-1}.

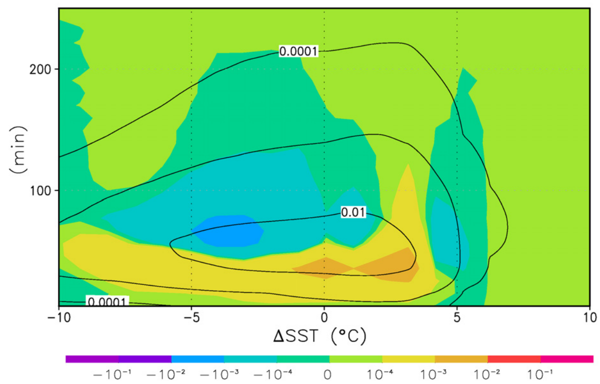

Figure 2 (right). Joint-PDF of residence time of light precipitation for warm clouds as a function of SST anomaly from present climate (ΔSST) in low latitudes over the ocean. Contour lines and color shades show the result from the present climate and its response to global warming, respectively.

- The increase of precipitation in the higher horizontal resolution model (7 km) was caused by the increase of both cold and warm rain. The net increase of cold rain occurred due to the increase of stronger precipitation (>40 mm hr^{-1}), most of which compensated for the decrease of weaker precipitation (<40 mm hr^{-1}). In contrast, warm rain increased in almost all ranges of precipitation intensity.
- The lifespan of warm clouds in a warmer atmosphere was reduced in most of the SST anomaly regimes.