**Figure S1.** 10-percentile thresholds of monthly snowfall accumulations (mm/month) for the SON, DJF and MAM months in the 3 columns respectively. The top row shows the CloudSat observations and the other four rows below show snowfall from the Low-Res (or Std-Res) setups of HadGEM3, EC-Earth3, MPIESM and ECMWF respectively.
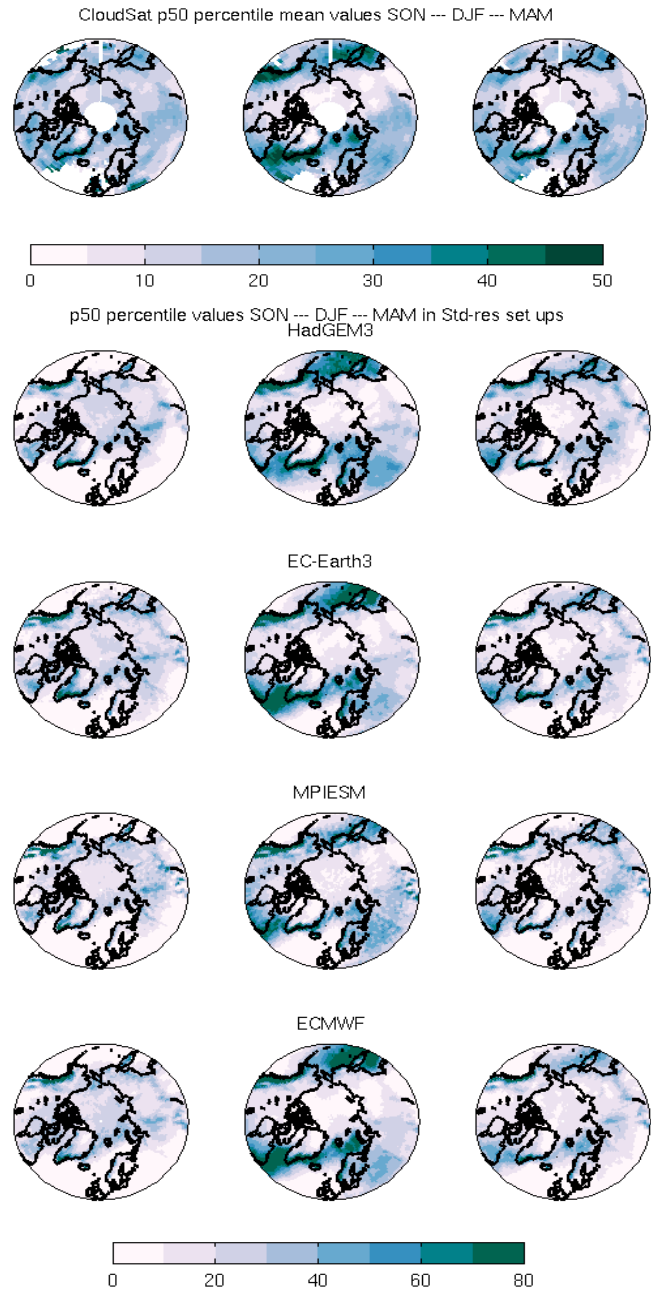
**Figure S2.** Same as Fig. S1, but, at 50-percentile threshold.
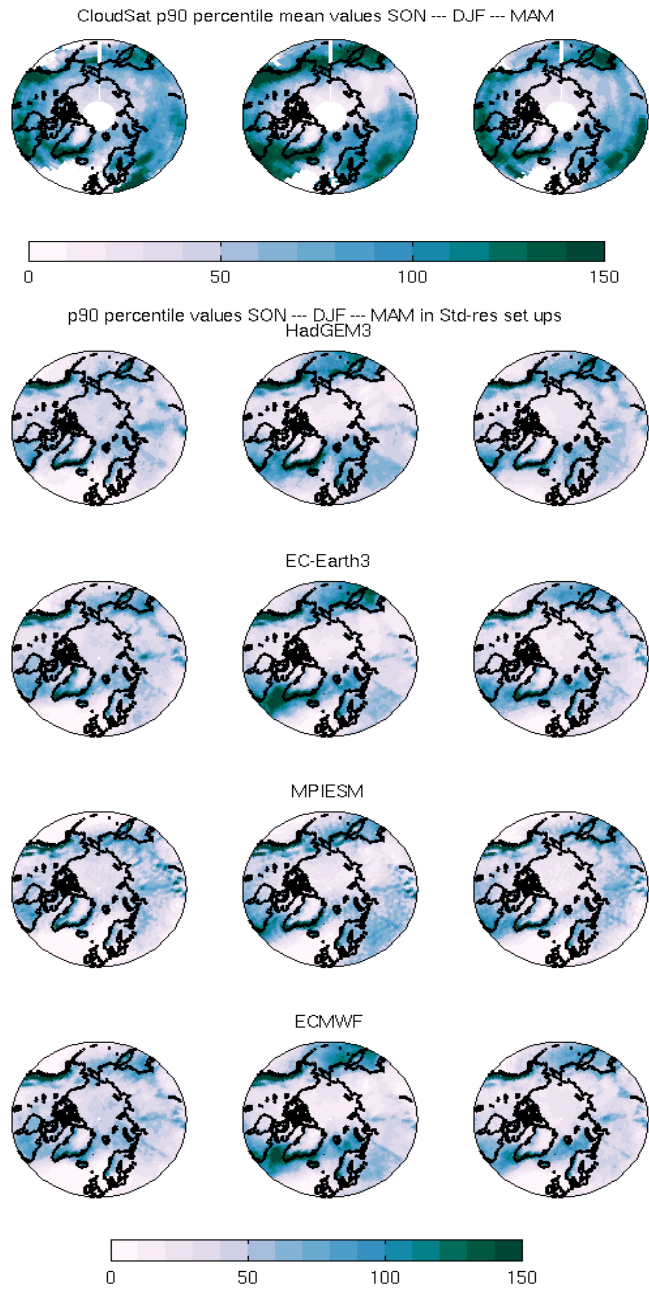
**Figure S3.** Same as Fig. S1, but, at 90-percentile threshold.