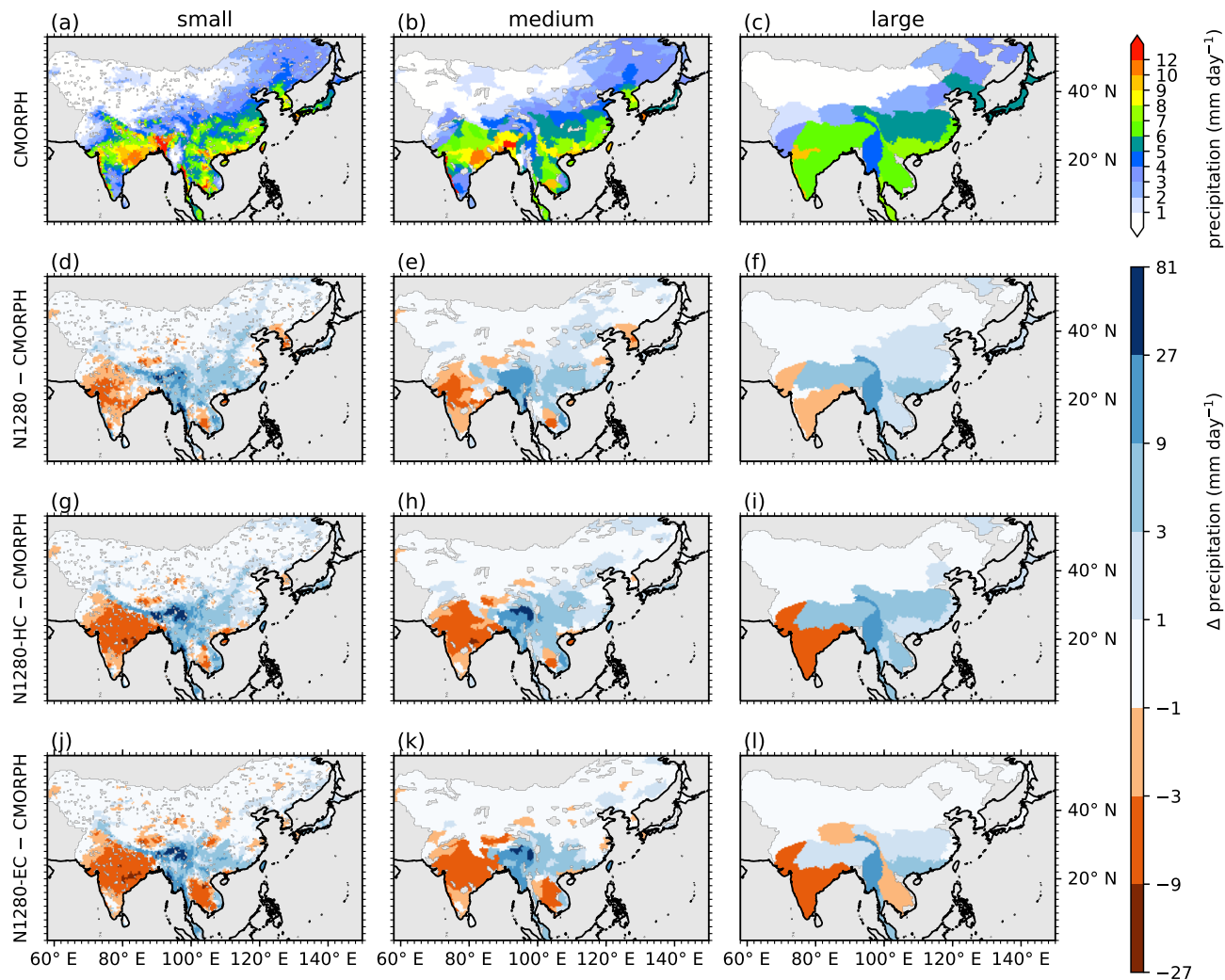
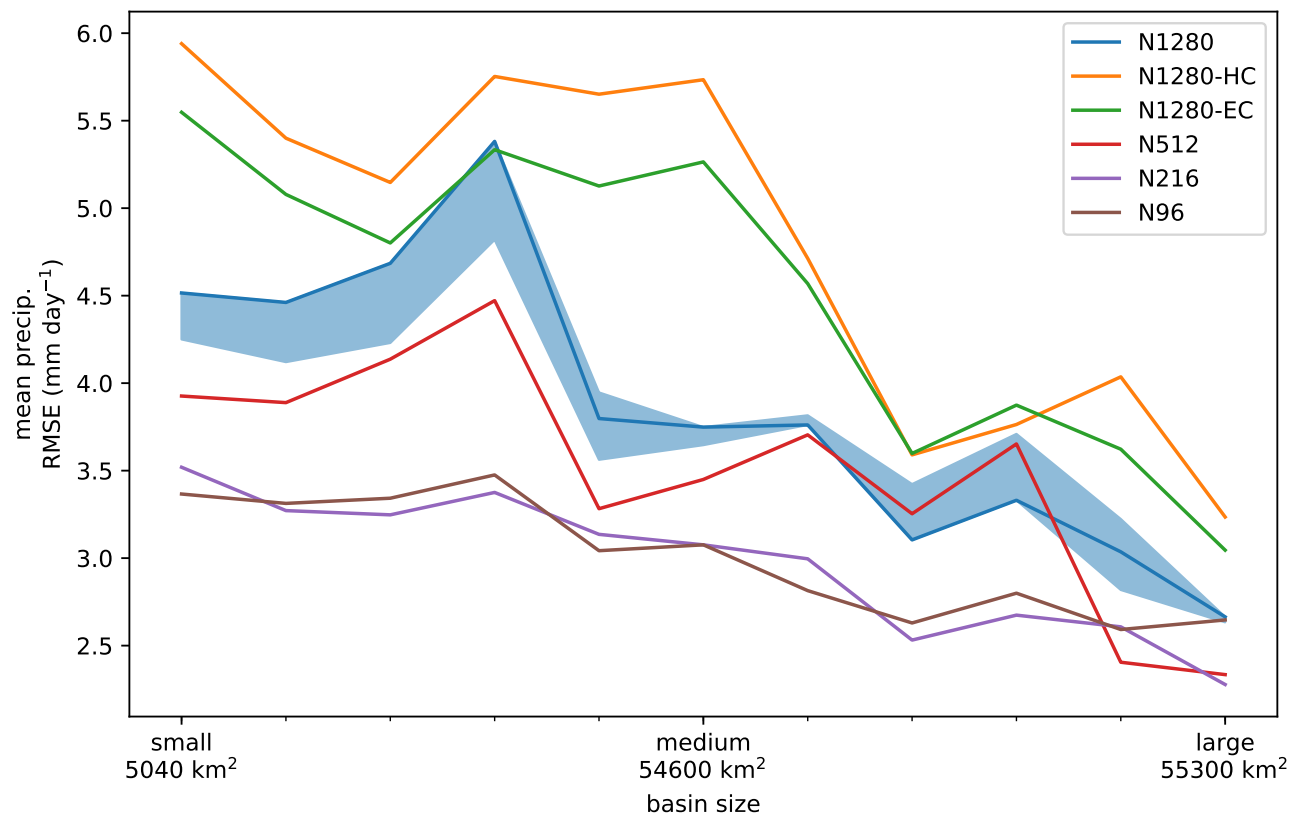


## List of Figures

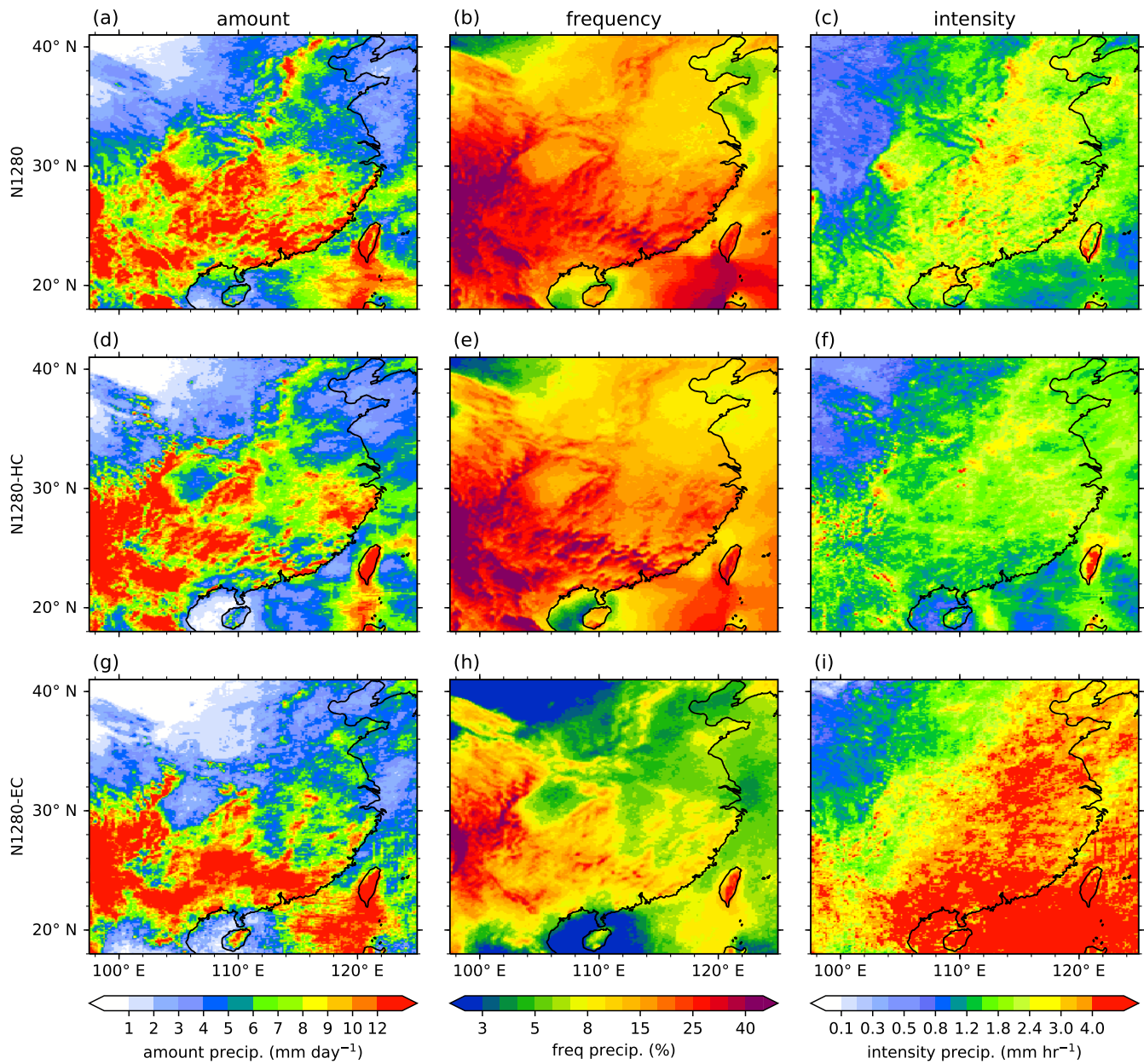
S1	As Fig. 4 in main paper, but additionally showing N1280-HC. Mean JJA precipitation over Asia averaged over basins of different scales. One basin scale is shown in each column, and one dataset is shown in each row. For the three simulations in (d)–(l), the difference between the simulated precipitation and CMORPH is shown. Note the similarity between N1280-HC and N1280-EC at all basin scales. . . . .	2
S2	As Fig. 5 in main paper, but for APHRODITE instead of CMORPH. Basin RMSE of each simulation compared to APHRODITE shown as a function of basin scale. Light blue shading shows the maximum spread for the three N1280 ensemble members. The basin name and median basin size are shown on the $x$ -axis. . . . .	3
S3	As Fig. 10 in main paper, but showing N1280-HC instead of CMORPH. Amount, frequency and intensity of precipitation (columns) over China for N1280 (top), N1280-HC (middle) and N1280-EC (bottom). . . . .	4
S4	As Fig. 11 in main paper, but showing N1280-HC instead of CMORPH. Diurnal cycle of amount, frequency and precipitation over south-eastern China. Layout as in Fig. S3. . . . .	5
S5	Shows JJA CMORPH amount, frequency and intensity for full duration of timeseries (1998–2018) over Asia. .	6
S6	As Fig. S5, but for JJA 2006–2009. . . . .	6



**Figure S1.** As Fig. 4 in main paper, but additionally showing N1280-HC. Mean JJA precipitation over Asia averaged over basins of different scales. One basin scale is shown in each column, and one dataset is shown in each row. For the three simulations in (d)–(l), the difference between the simulated precipitation and CMORPH is shown. Note the similarity between N1280-HC and N1280-EC at all basin scales.

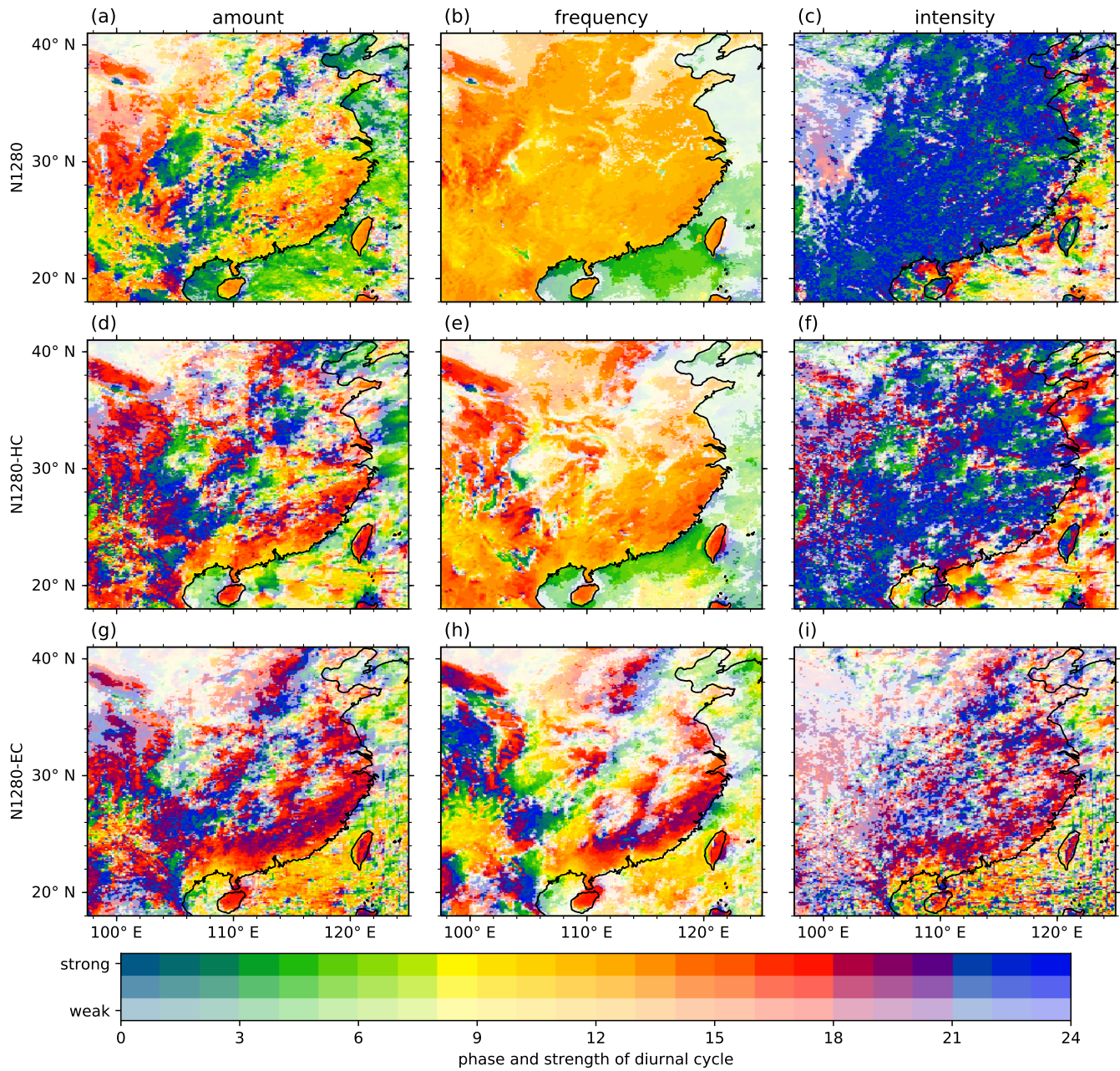


**Figure S2.** As Fig. 5 in main paper, but for APHRODITE instead of CMORPH. Basin RMSE of each simulation compared to APHRODITE shown as a function of basin scale. Light blue shading shows the maximum spread for the three N1280 ensemble members. The basin name and median basin size are shown on the  $x$ -axis.

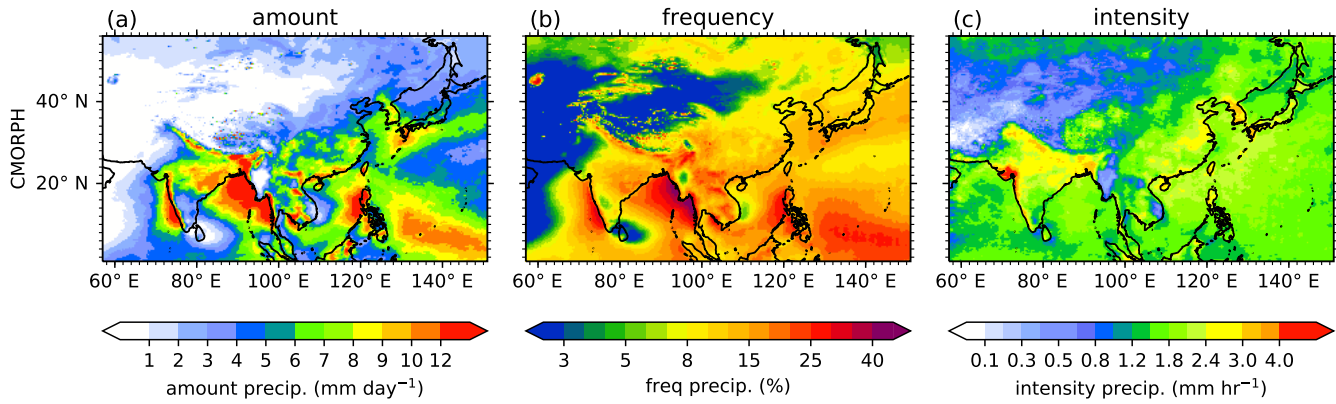


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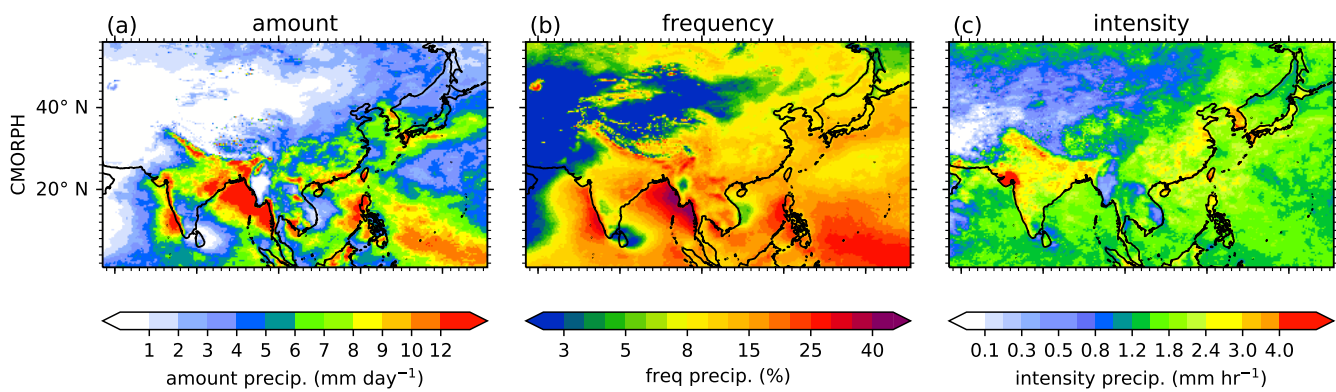




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**Figure S5.** Shows JJA CMORPH amount, frequency and intensity for full duration of timeseries (1998–2018) over Asia.



**Figure S6.** As Fig. S5, but for JJA 2006–2009.