Supporting Information for

Global streamflow and flood response to stratospheric aerosol geoengineering

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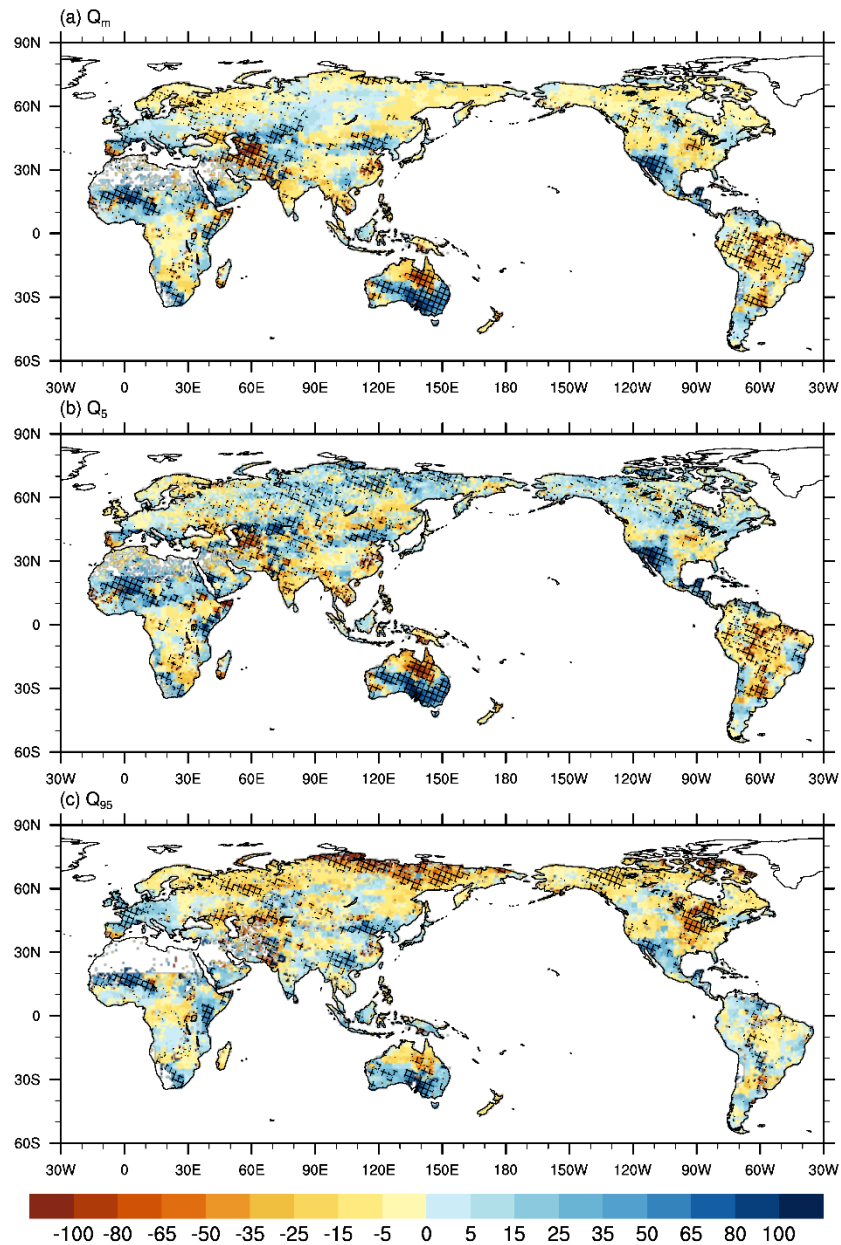
BNU-ESM

Figure S1: Relative difference of three river streamflow indicators between G4 (2030-2069) and RCP4.5 (2030-2069), as percentages of the mean of G4 and RCP4.5: $100\% \times 2(G4 - RCP4.5) / (G4 + RCP4.5)$, projected by BNU-ESM. From Top, to bottom represents long-term mean flow (Q_m); Middle, high flow (Q_5); and Bottom, low flow (Q_{95}). Grid cells with river discharge less than 0.01 mm/day are masked. Hashed areas indicate locations where the streamflow changes are significant at the 95% level.
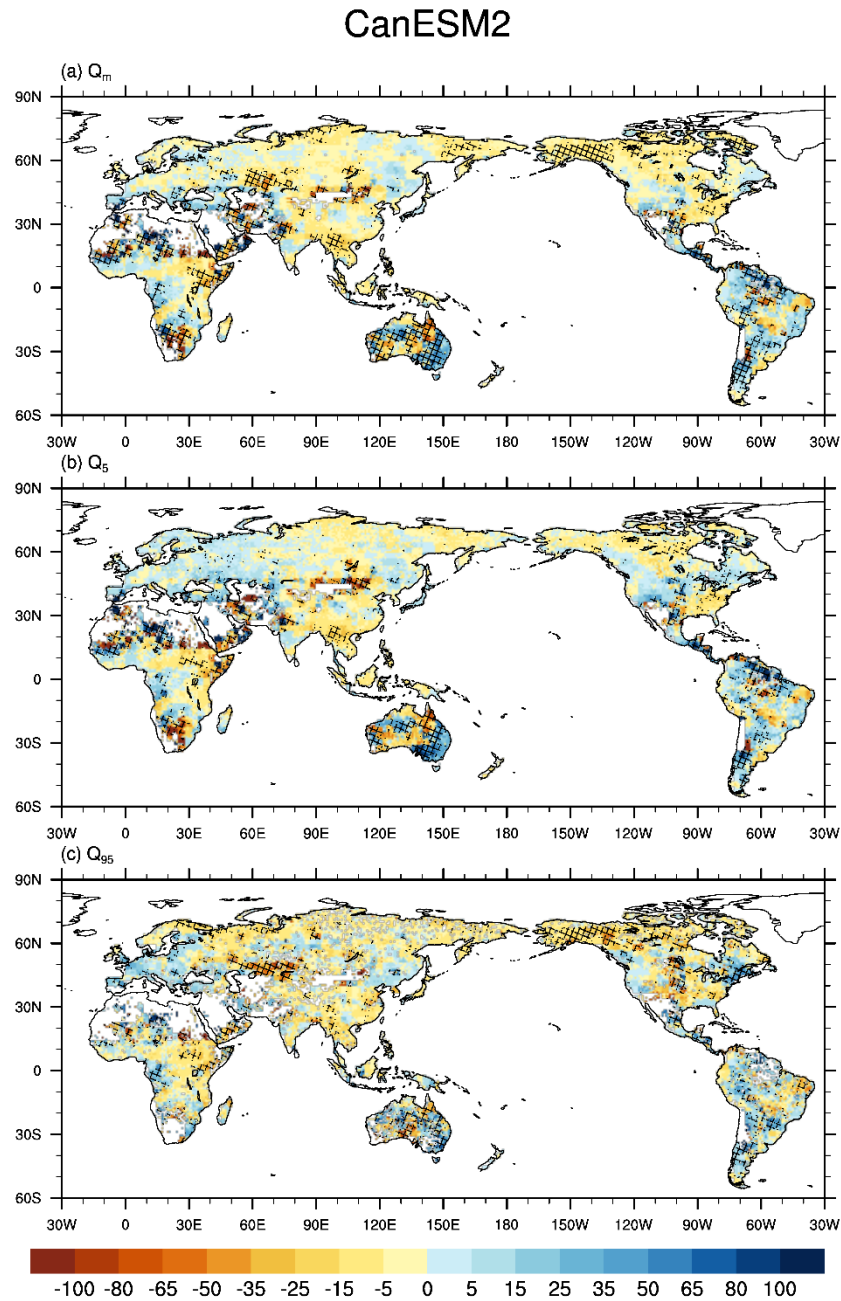

CanESM2

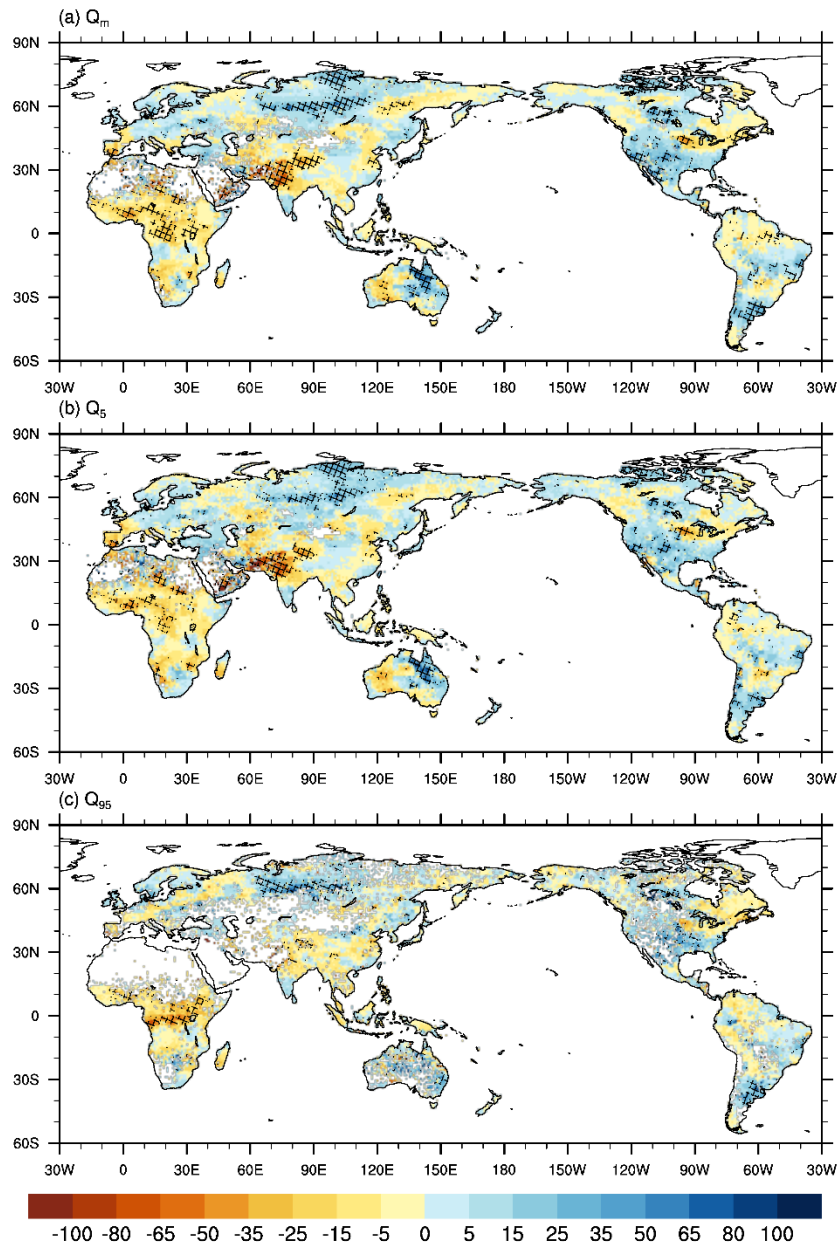Figure S2: As for Figure S1 but for CanESM2

GEOSCCM

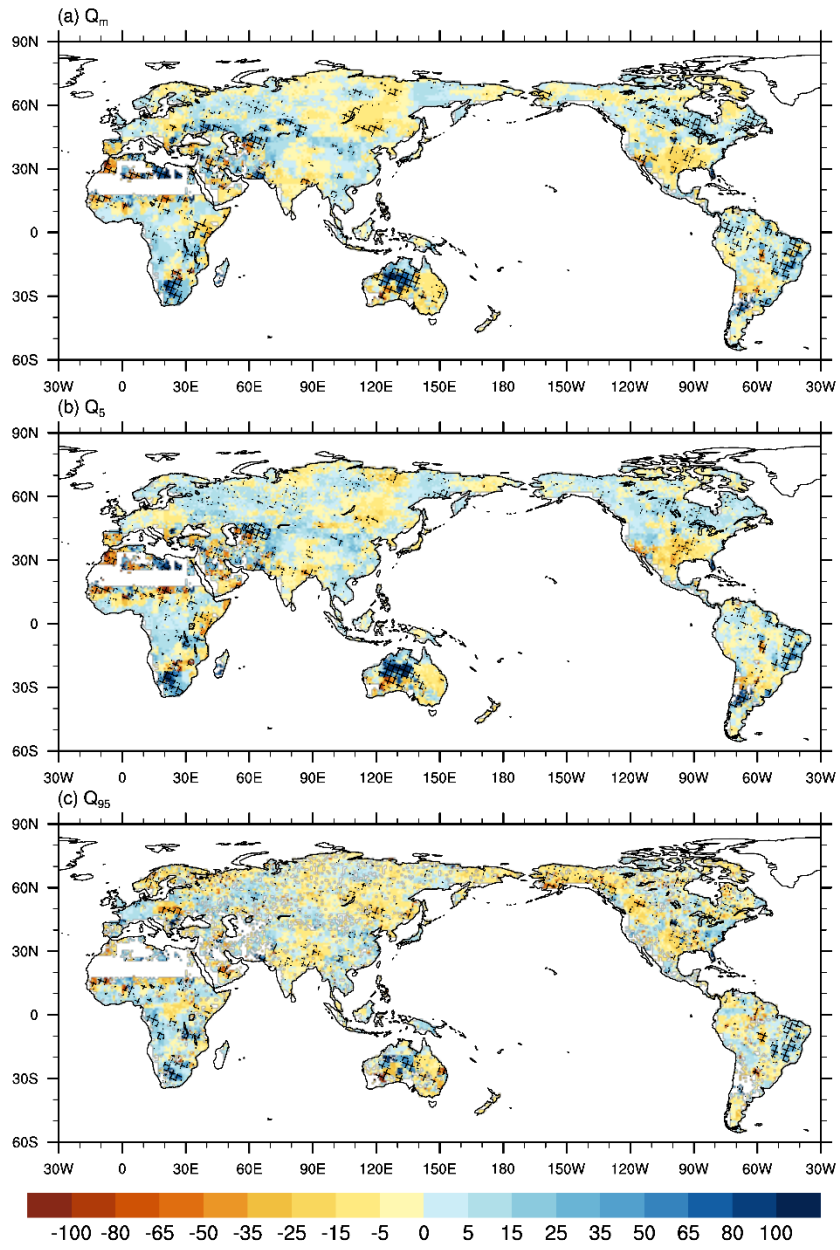Figure S3: As for Figure S1 but for GEOSCCM.

MIROC-ESM

(a) Q$_m$

(b) Q$_5$

(c) Q$_{95}$

-100 -80 -65 -50 -35 -25 -15 -5 0 5 15 25 35 50 65 80 100

Figure S4: As for Figure S1 but for MIROC-ESM.

MIROC-ESM-CHEM

(a) Q_m

(b) Q_5

(c) Q_{95}
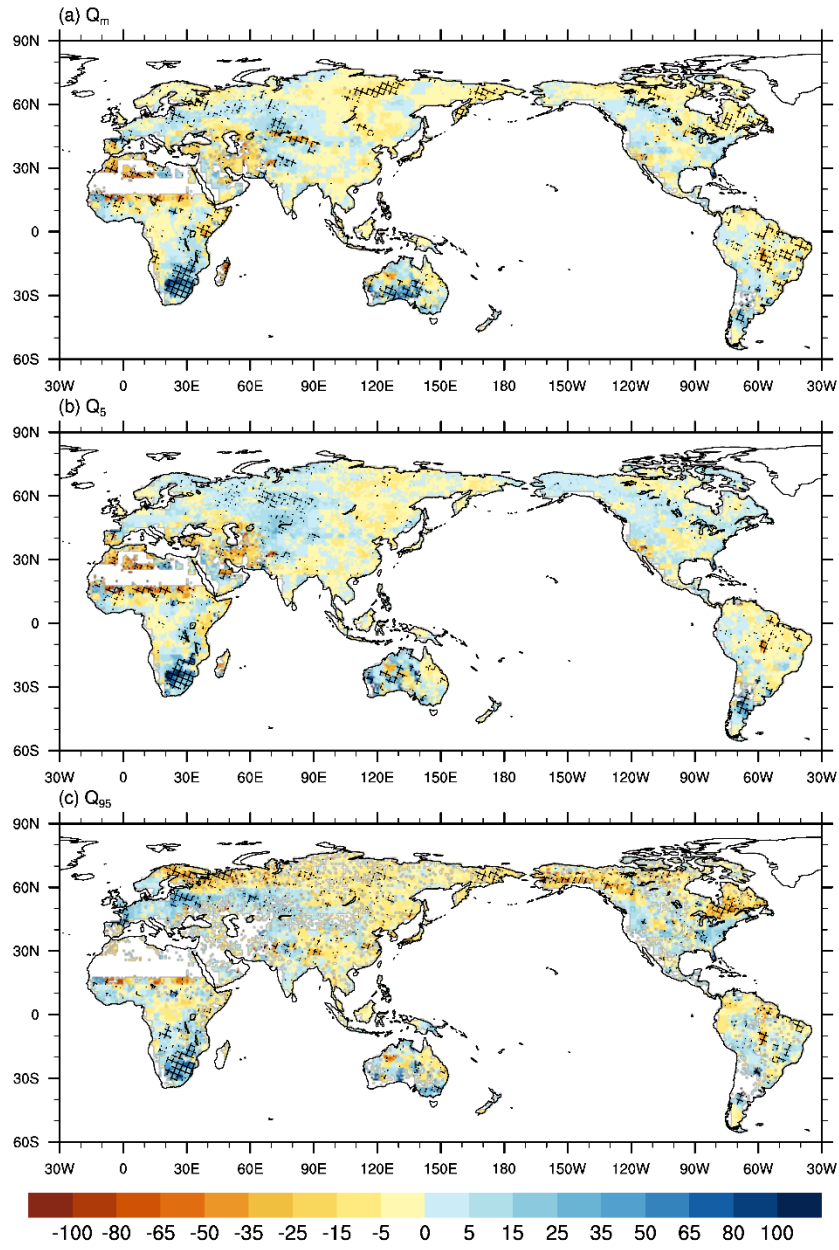
-100 -80 -65 -50 -35 -25 -15 -5 0 5 15 25 35 50 65 80 100

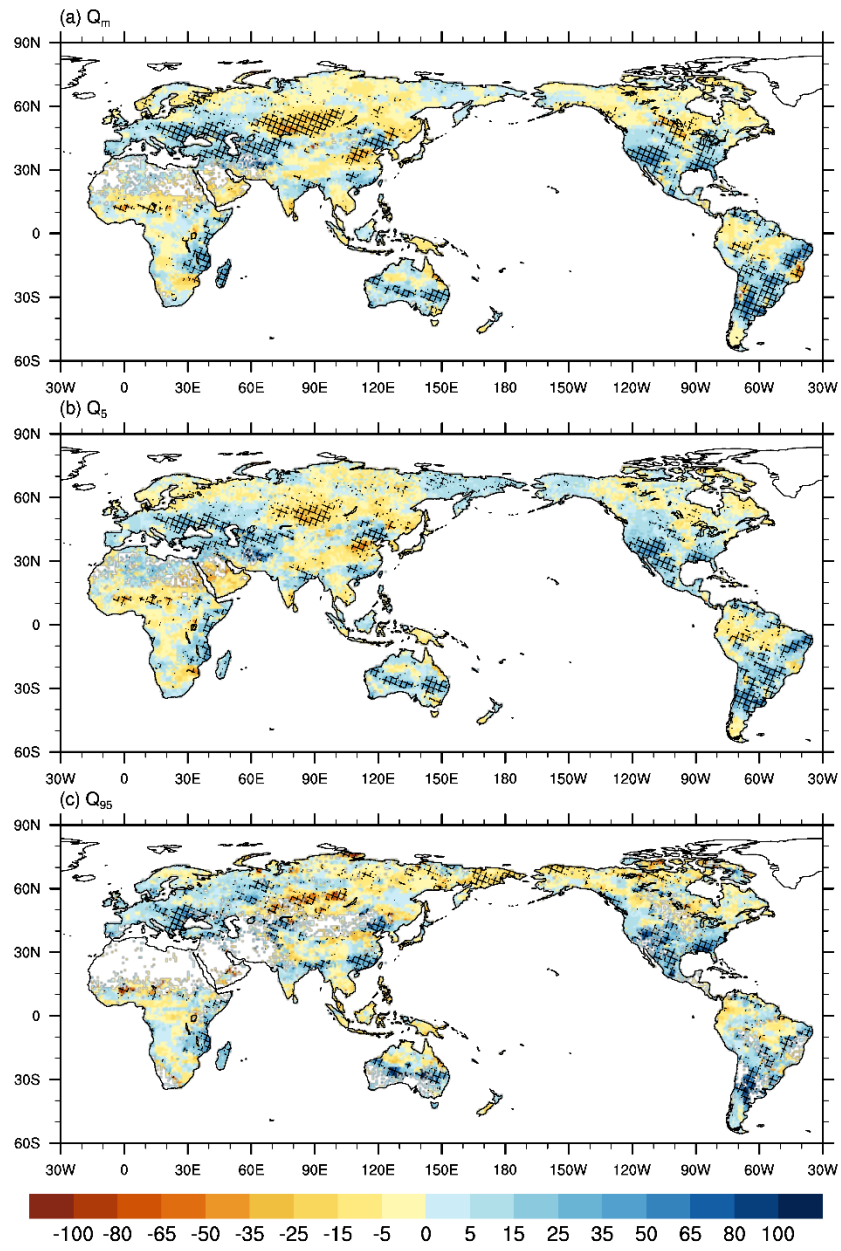Figure S5: As for Figure S1 but for MIROC-ESM-CHEM.
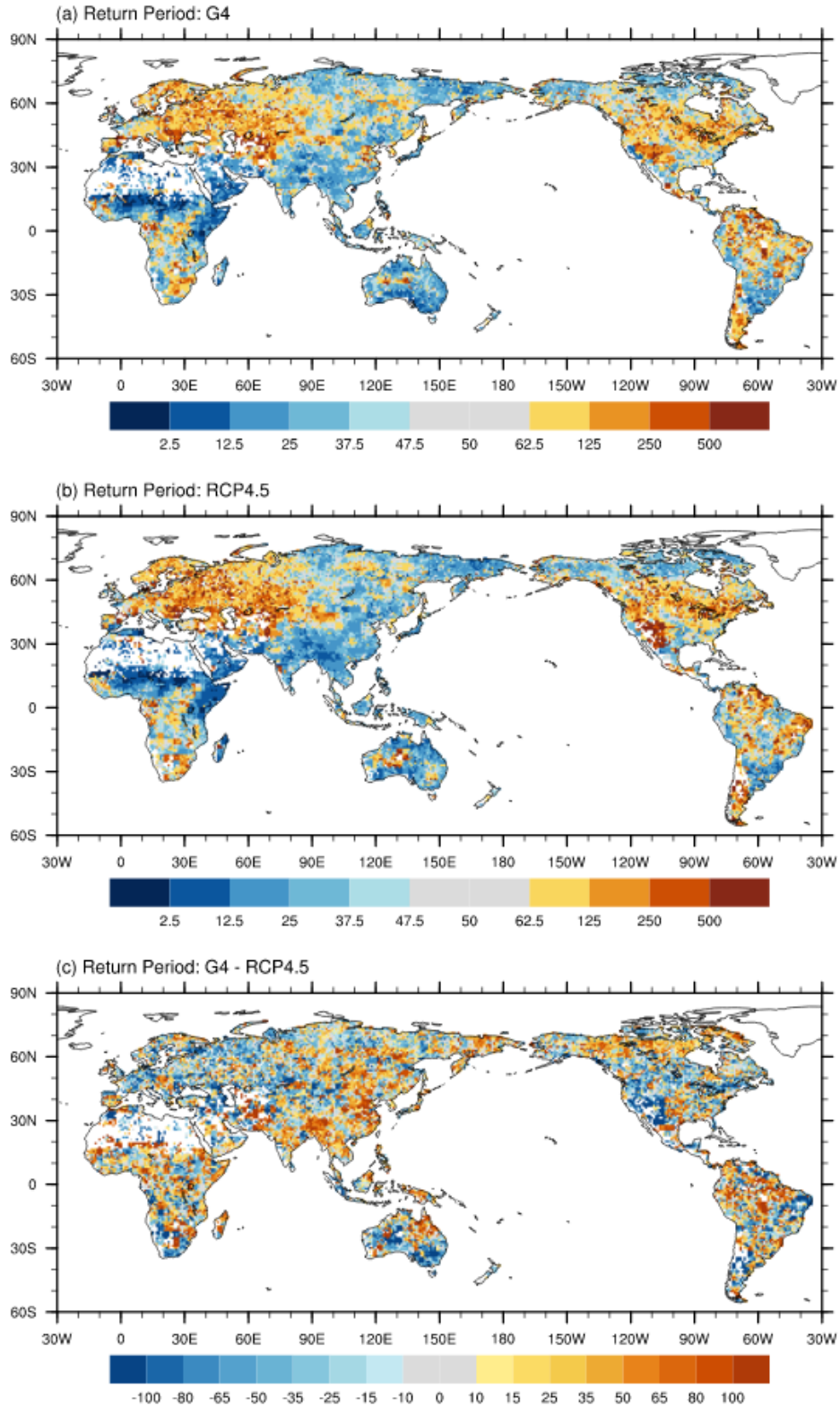
Figure S6: As for Figure S1 but for NorESM1-E.

Figure S7: Multi-model ensemble median of return periods for discharge which correspond to 50-year return period in the historical simulation (1960-1999) under (a) G4, (b) RCP4.5 scenarios and (c) the relative difference of G4 and RCP4.5, as percentages of mean of return periods: $100\% \times 2(\text{G4} - \text{RCP4.5}) / (\text{G4} + \text{RCP4.5})$. i.e. mean annual discharge for historical period less than 0.01 mm/day were masked out.
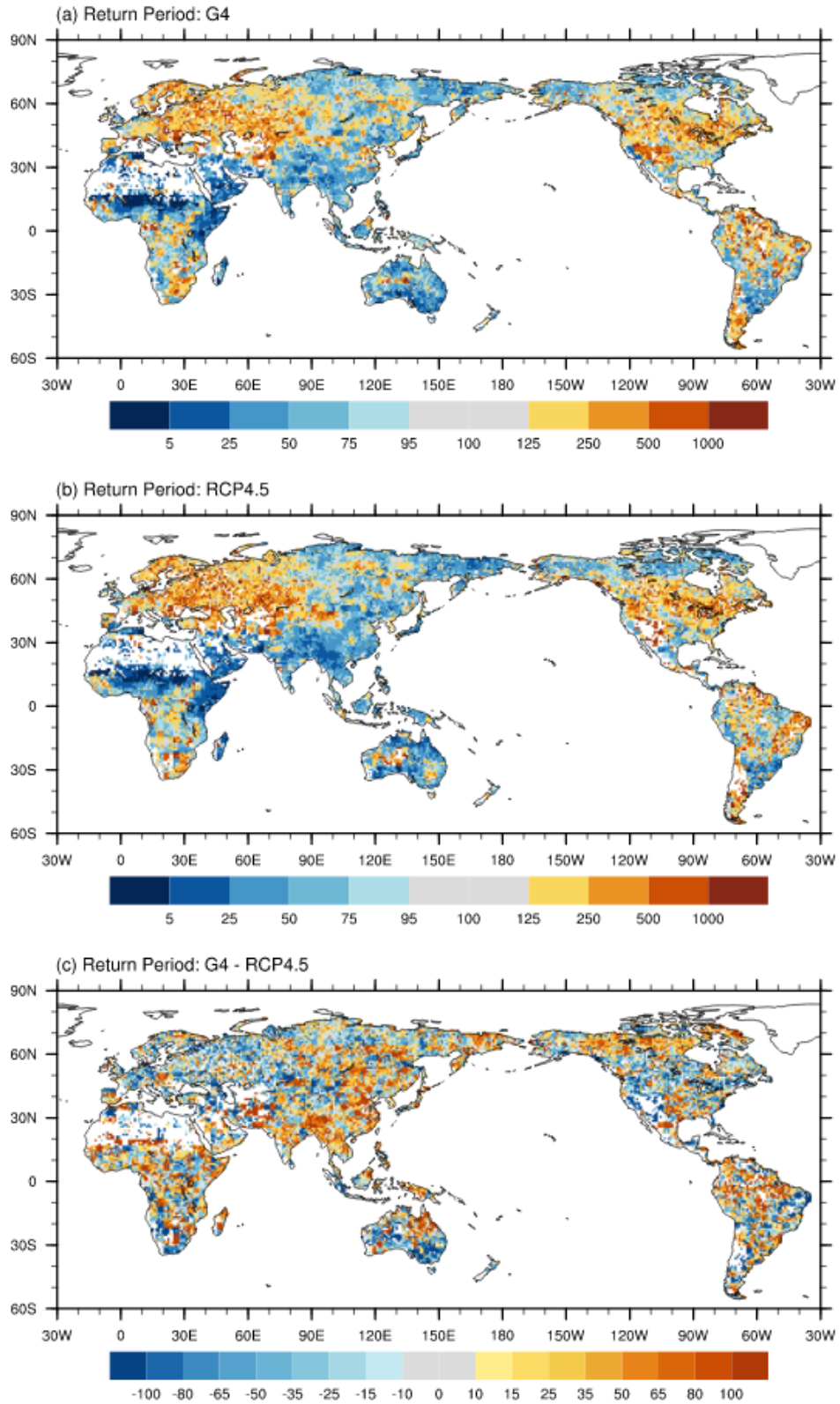
Figure S8: As for Figure S7 but for 100-year return periods.