



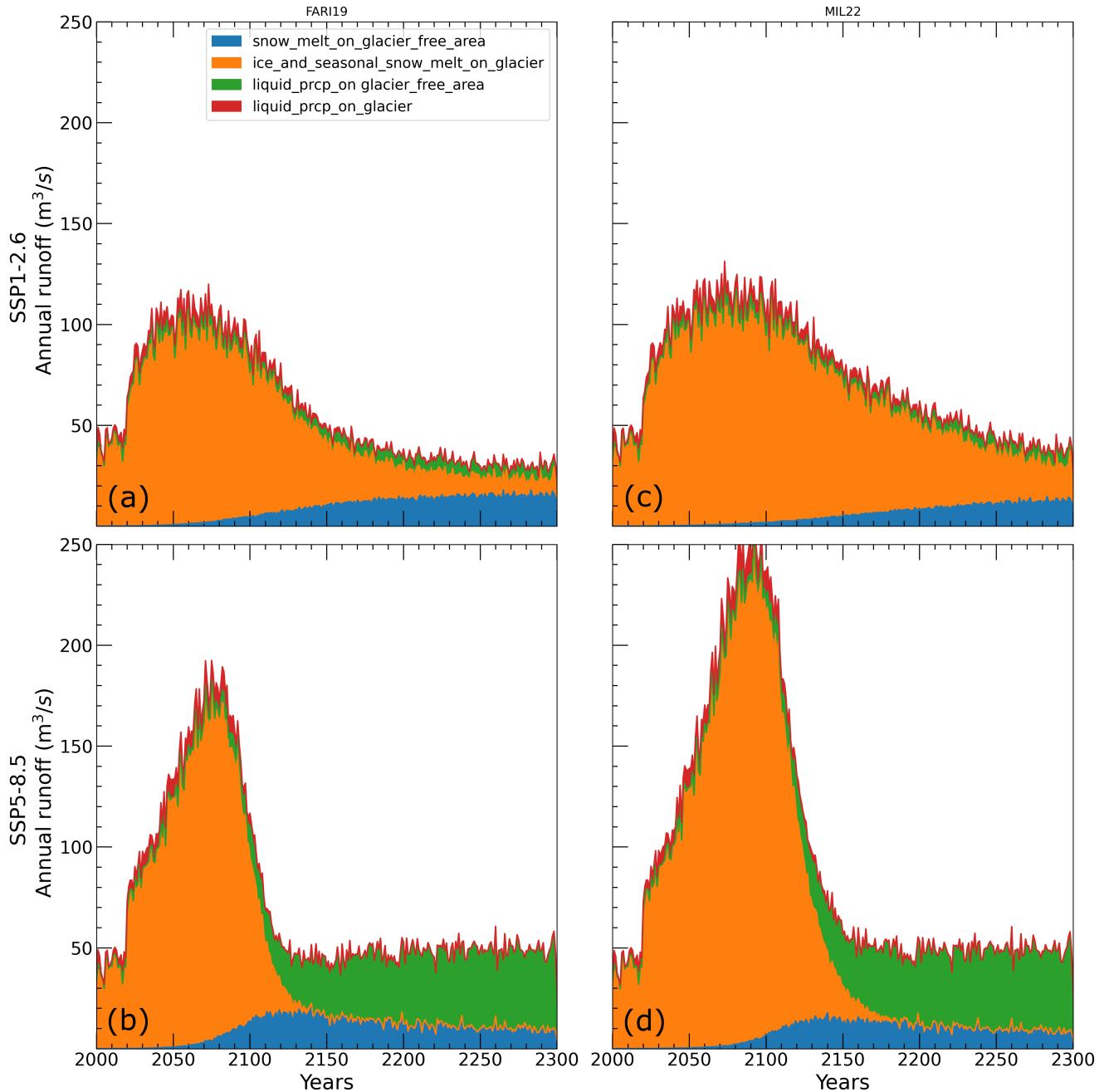
*Supplement of*

## **Brief communication: Sensitivity analysis of peak water to ice thickness and temperature: A case study in the Western Kunlun Mountains of the Tibetan Plateau**

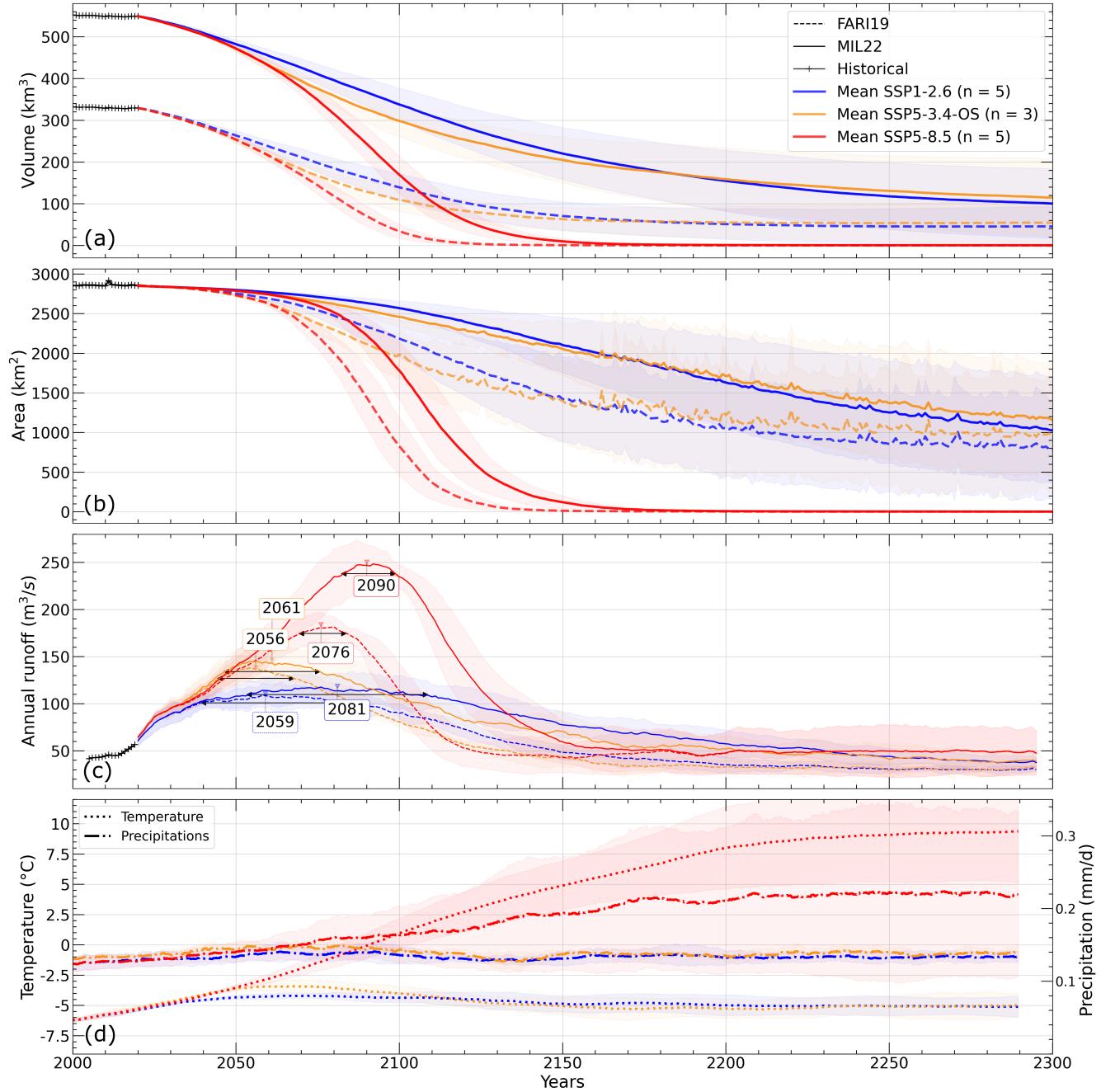
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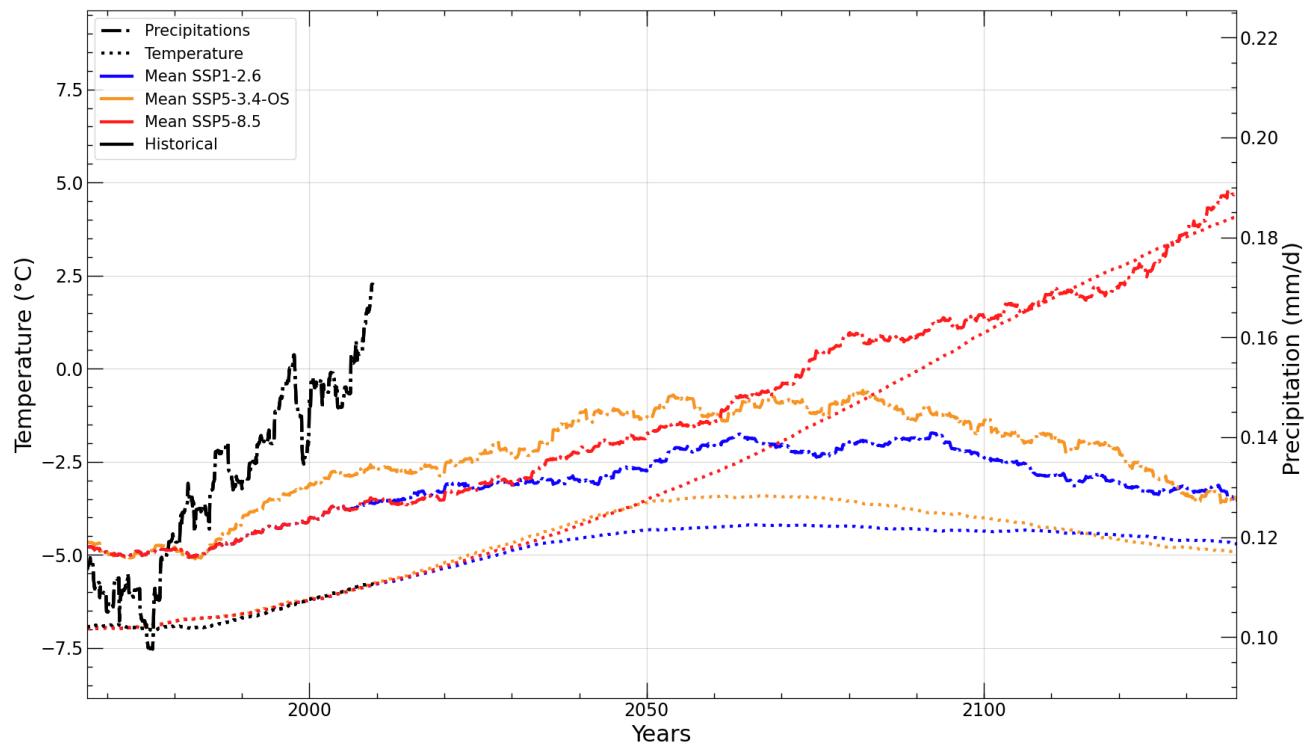
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**Figure S1.** Simulated evolution of cumulative annual runoff for all 160 glaciers with its four different contributions, using FARI19 dataset ((a) & (b)), and MIL22 dataset ((c) & (d)) under SSP1-2.6 and SSP5-8.5.



**Figure S2.** Projections of glacier evolution in the region of interest: the cumulative of all 160 glaciers (a) volumes, (b) areas and (c) annual runoffs, with an assessment of peak water timing, accompanied by (d) mean temperatures and precipitations projections under various SSPs (multi-GCM mean shown in bold, shading is the mean  $\pm 1$  standard deviation of the GCM ensemble).



**Figure S3.** Multi-GCMs mean temperatures and precipitation projections under various SSPs, with historical climate data from W5E5 shown in black.