Supplemental Material

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Impact of Land Initial States Uncertainty on Subseasonal Surface Air Temperature Prediction in CFSv2 Reforecasts
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Supplemental Material for

Impact of land initial states uncertainty on subseasonal surface air temperature prediction in CFSv2 reforecasts

Chul-Su Shin[1*], Paul A. Dirmeyer[1], Bohua Huang[1], Subhadeep Halder[2] and Arun Kumar[3]

[1]Department of Atmospheric, Oceanic and Earth Sciences
Center for Ocean-Land-Atmosphere Studies
George Mason University
Fairfax, Virginia 22030

[2]K. Banerjee Centre of Atmospheric and Ocean Studies
University of Allahabad
Uttar Pradesh, India

[3]Climate Prediction Center,
National Centers for Environmental Prediction/NOAA
College Park, MD, USA

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[*] *Corresponding author's address*: Chul-Su Shin, Department of Atmospheric, Oceanic, and Earth Sciences, Mail Stop 6C5, George Mason University, 4400 University Drive, Fairfax, VA 22030. e-mail: cshin3@gmu.edu

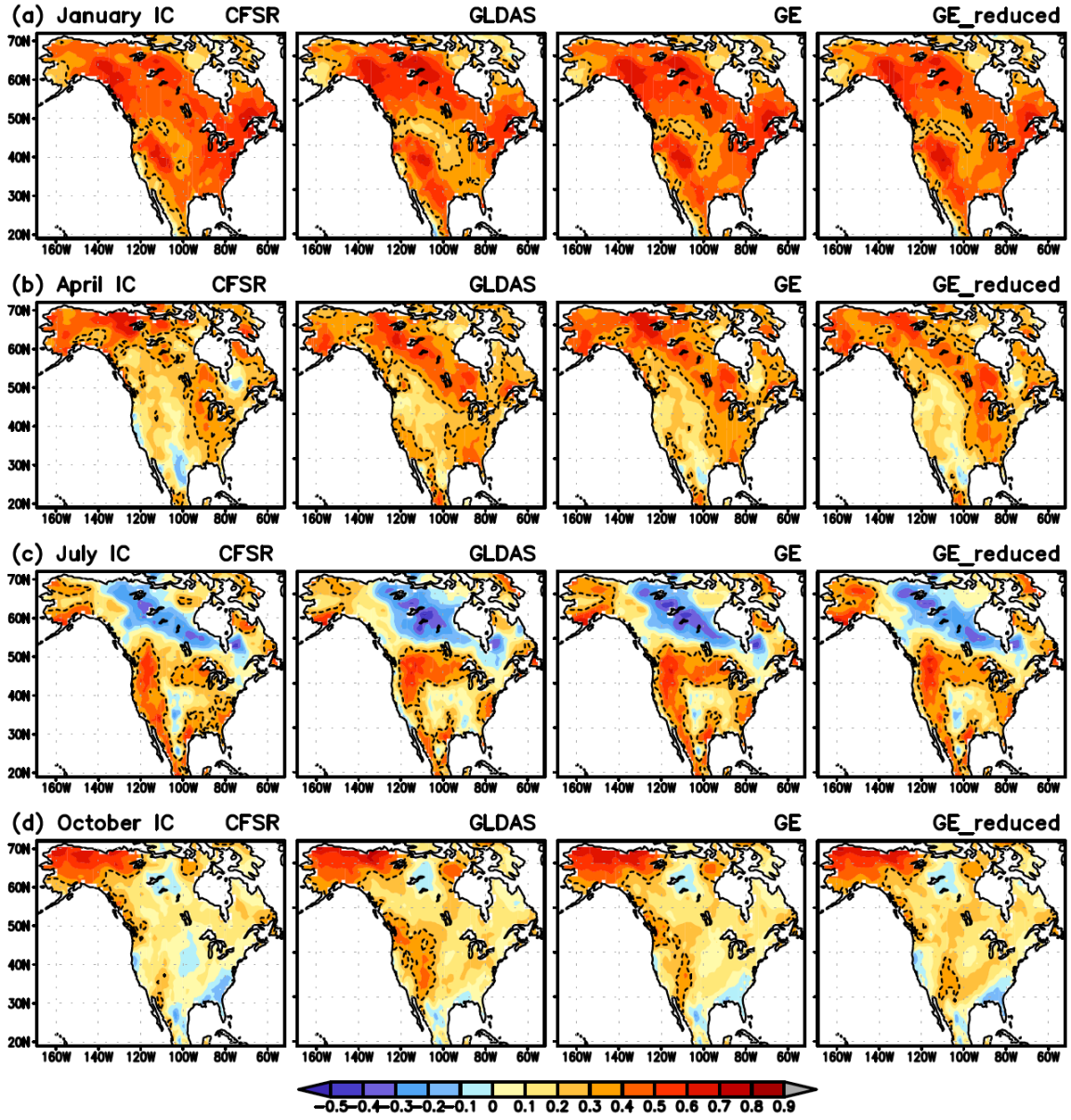

Figure S1 Anomaly correlation coefficient of 2-m air temperature at week-3 for 1979-2010 as indicated in the CFSR reforecasts, the GLDAS reforecasts, the GE reforecasts and the GE_reduced reforecasts (from left to right) with (a) January initial conditions (IC), (b) April IC, (c) July IC and (d) October IC. Dashed curves denote regions exceeding the 95% confidence level. See the text for details about the CFSR, GLDAS, GE and GE_reduced reforecasts.

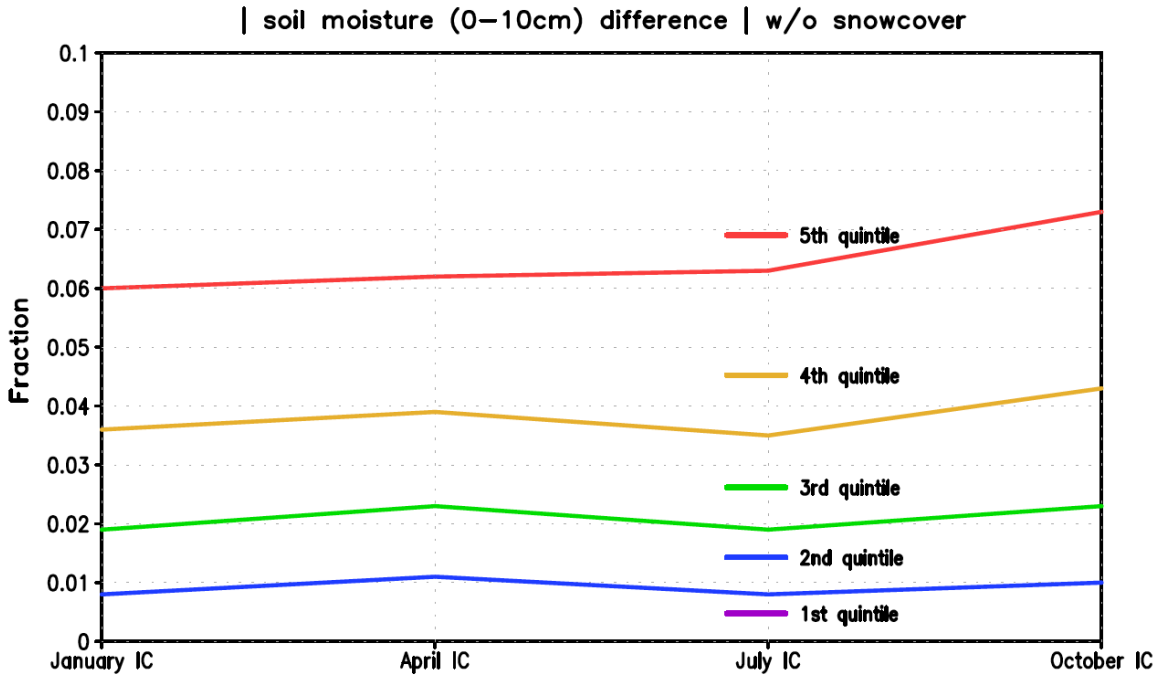

Figure S2 Same as Fig. 9, but excluding land grid cells under snow cover and frozen ground.

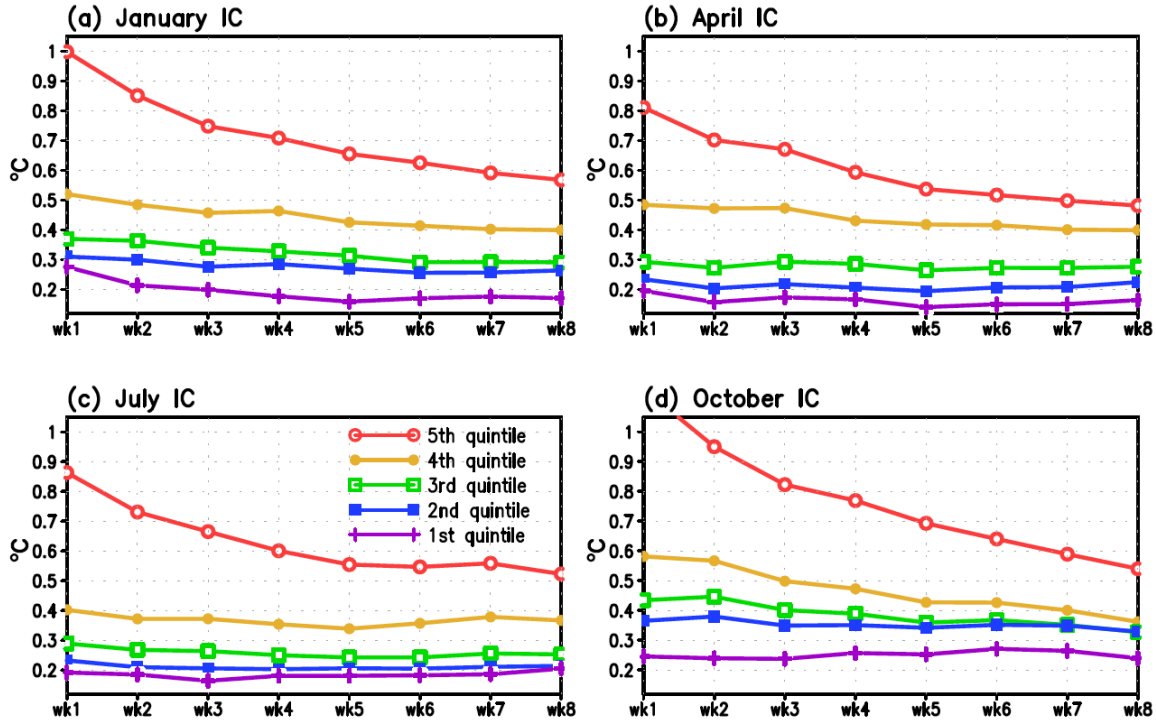

Figure S3 (a) Area averaged magnitude of 32-year mean difference of predicted 2-m air temperature [unit: °C] between the GLDAS and CFSR reforecasts (GLDAS minus CFSR) over the land grid cells of each quintile determined in Fig. S2 for January ICs, (b)~(d) same as (a) but for April ICs, July ICs and October ICs, respectively. The abscissa is the lead-time from week-1 to week-8.

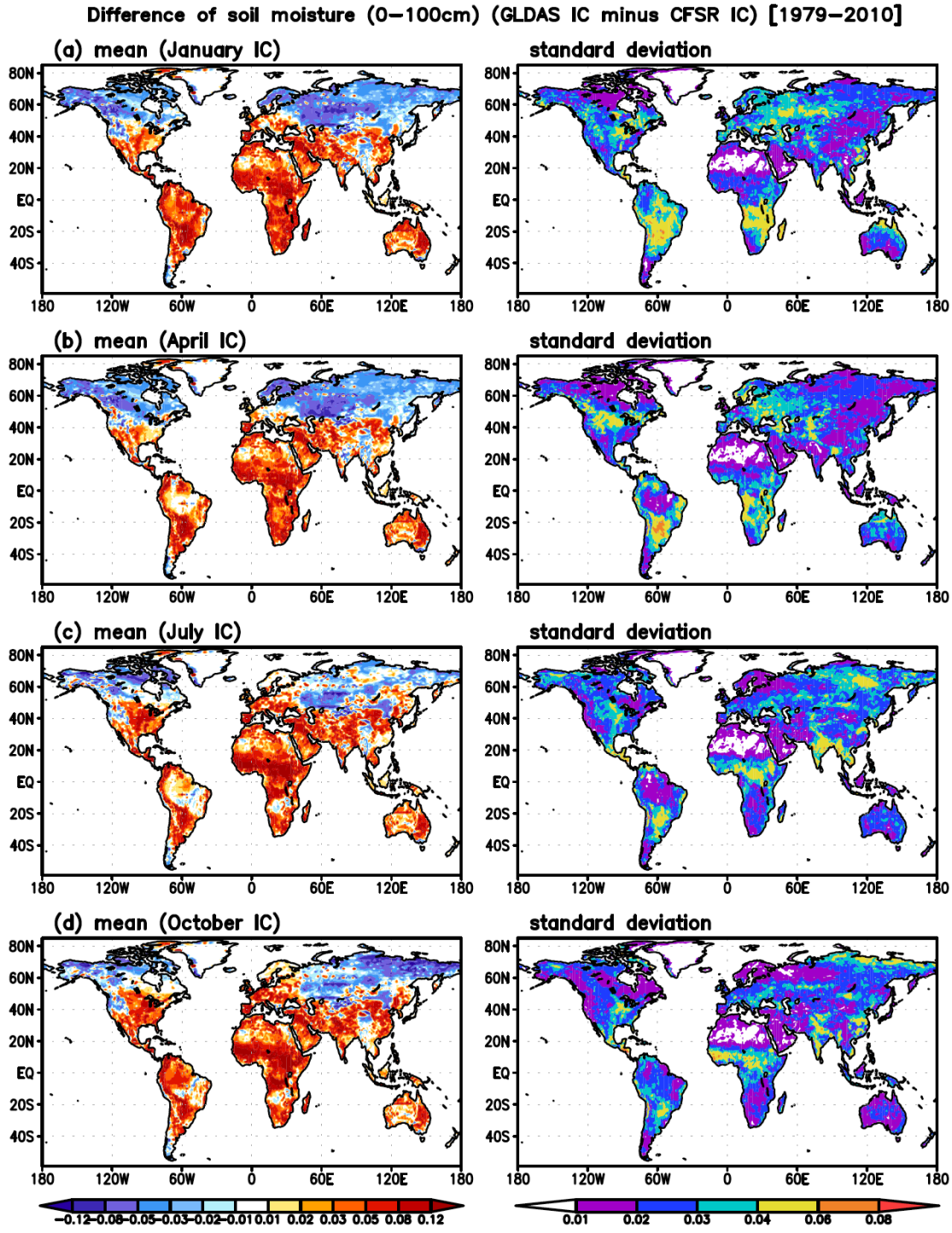

Figure S4 (Left) 32-year mean difference of volumetric soil moisture at 0-100cm [unit: fraction] between the land initial conditions (ICs) of the GLDAS and CFSR reforecasts (GLDAS minus CFSR) and (right) its standard deviation during the period of 1979-2010 for (a) January ICs, (b) April ICs, (c) July ICs and (d) October ICs.

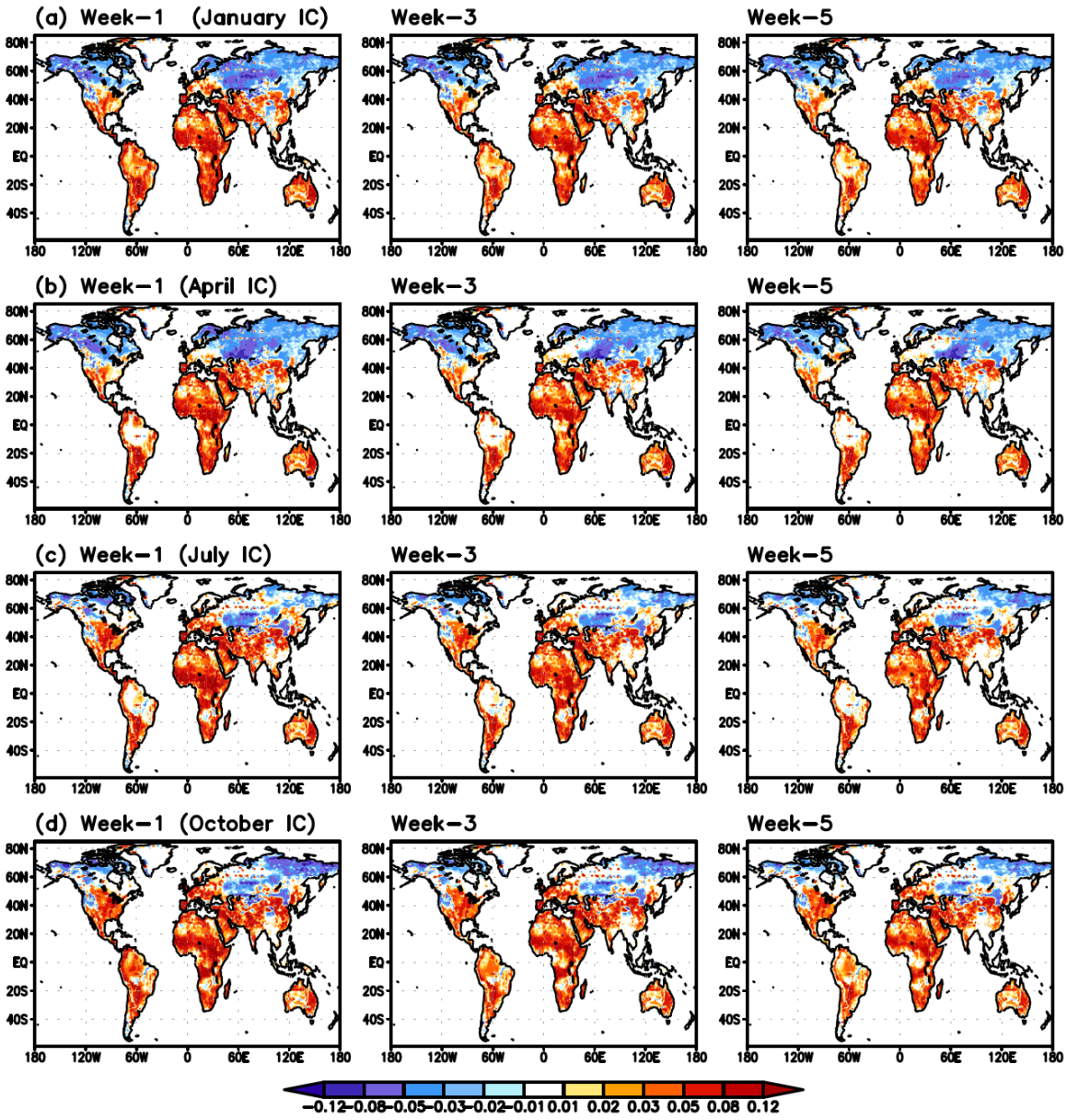

Figure S5 (a) 32-year mean difference of predicted soil moisture at 0-100cm [unit: fraction] between the GLDAS and CFSR reforecasts (GLDAS minus CFSR) at (left) week-1, (middle) week-3 and (right) week-5 for January ICs, (b)~(d) same as (a) but for April ICs, July ICs and October ICs, respectively.

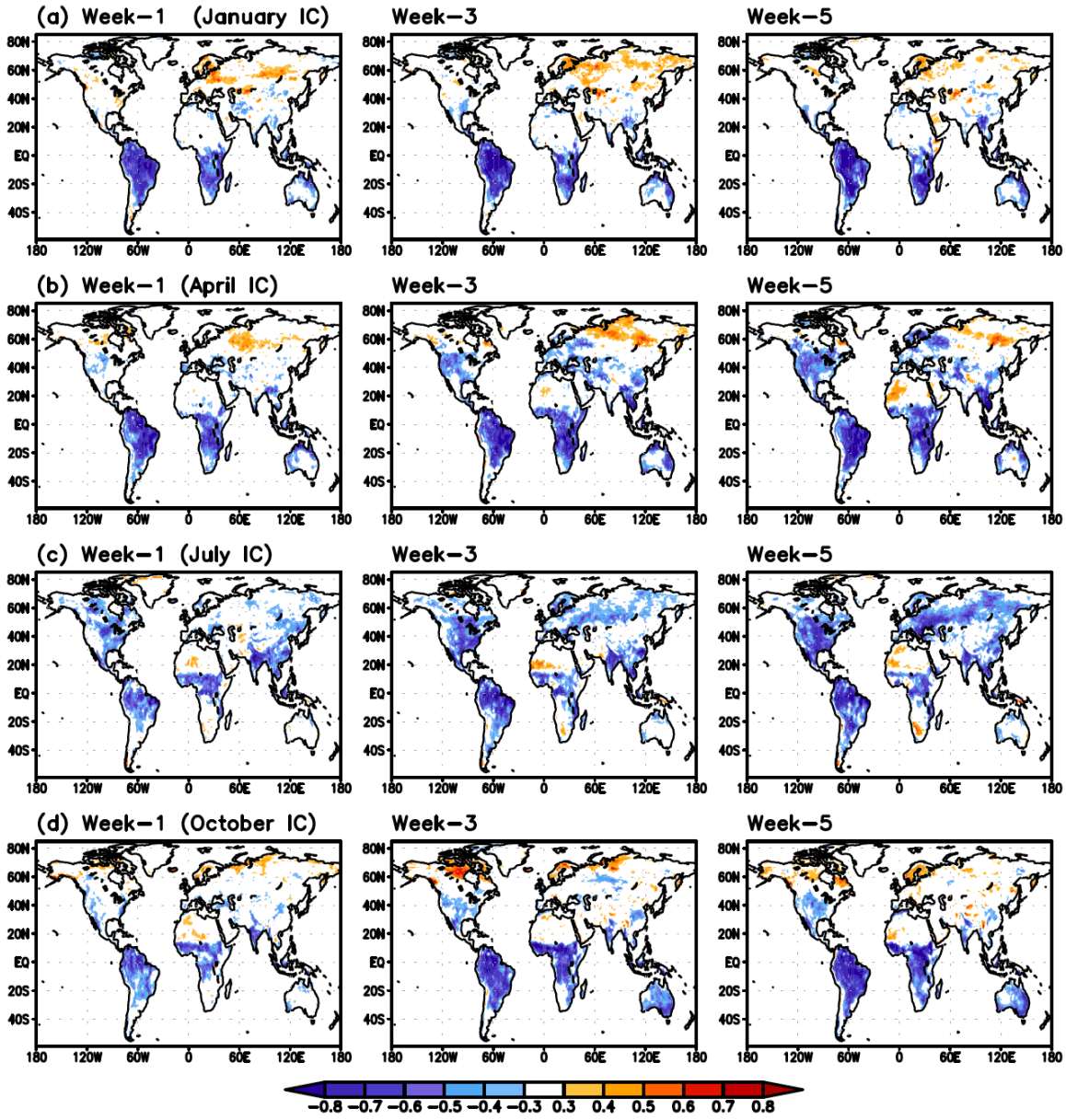

Figure S6 (a) Anomaly correlation coefficient between predicted soil moisture at 0-100cm and predicted 2-m air temperature in the CFSR reforecasts at (left) week-1, (middle) week-3 and (right) week-5 for January ICs, (b)~(d) same as (a) but for April ICs, July ICs and October ICs, respectively. Note that the correlation coefficients are calculated based on the ensemble mean of each forecast.

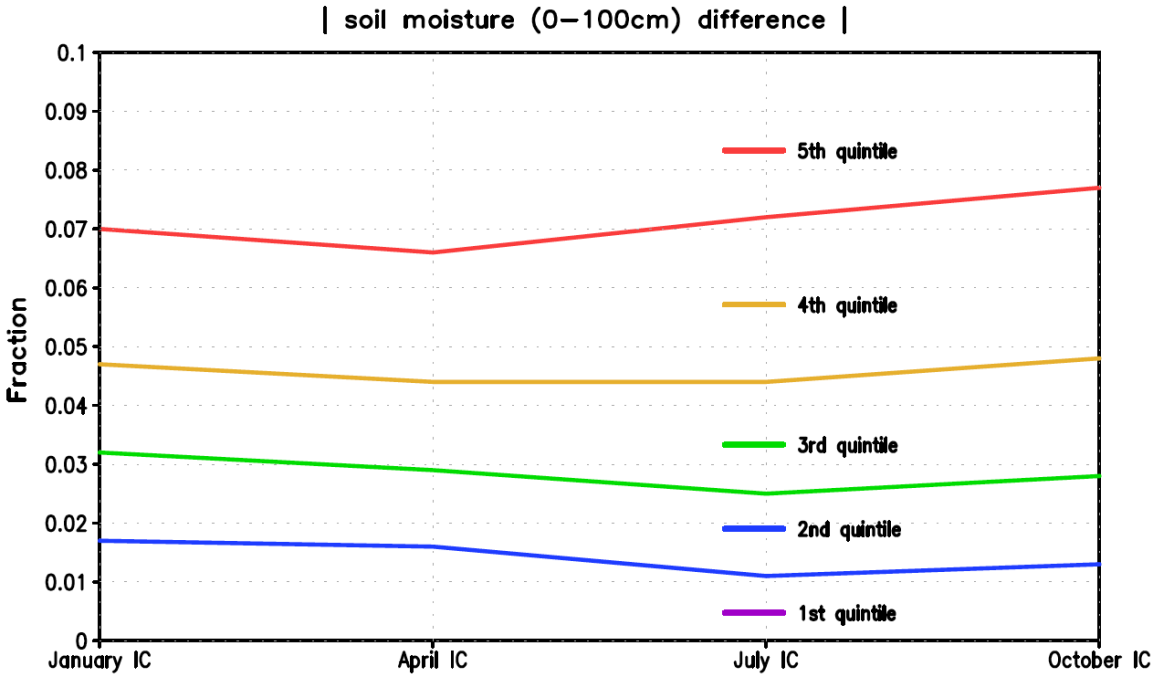

Figure S7 Same as Fig. 9 except for volumetric soil moisture at 0-100cm [unit: fraction].

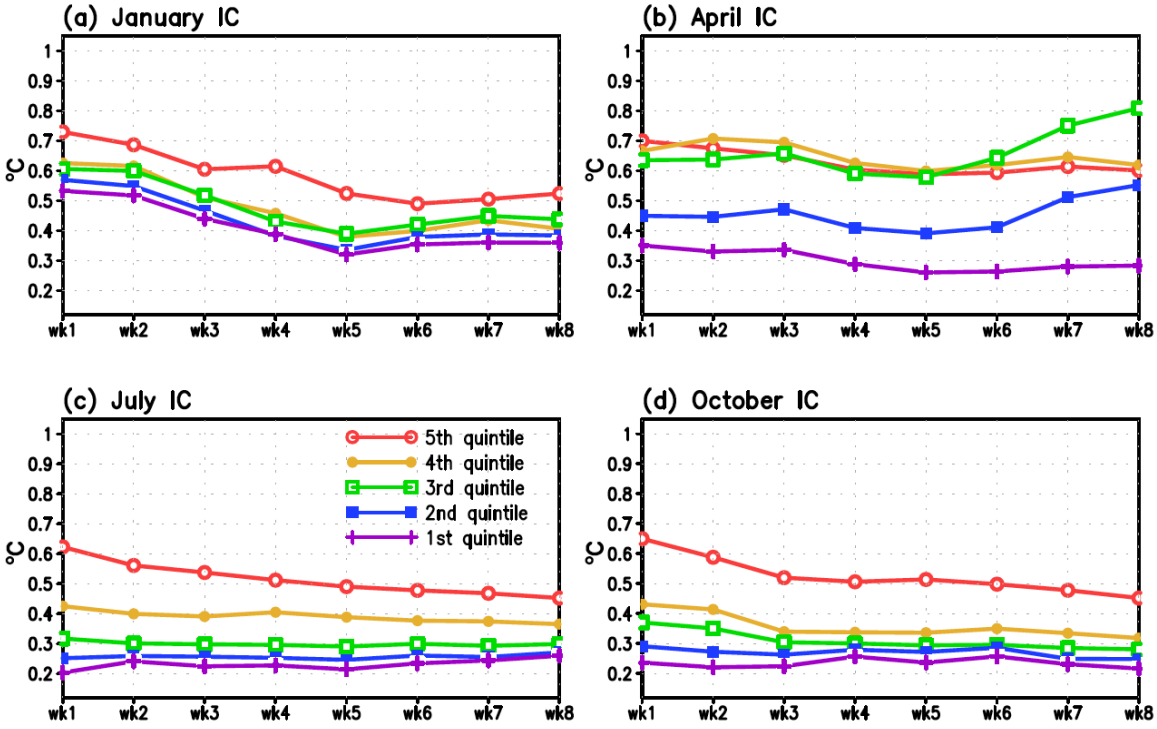

Figure S8 (a) Area averaged magnitude of 32-year mean difference of predicted 2-m air temperature [unit: °C] between the GLDAS and CFSR reforecasts (GLDAS minus CFSR) over the land grid cells of each quintile determined in Fig. S7 for January ICs, (b)~(d) same as (a) but for April ICs, July ICs and October ICs, respectively. The abscissa is the lead-time from week-1 to week-8.