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Supplement of

The observed evolution of Arctic amplification over the past 45 years

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Introduction

This supporting information provides supplementary figures related to the analysis using the Berkeley Earth Surface Temperatures (BEST) data and ERA5 reanalysis. Figures S1, S3, and S4 show results from BEST, including seasonal linear trends in surface temperature (Figure S1) and decadal 2-m temperature anomalies relative to 1981-2020 for autumn (Figure S3) and winter (Figure S4). Figure S2 presents linear trends in surface sensible heat flux (SHF) and latent heat flux (LHF) from ERA5 for winter (DJF) and autumn (SON). In all figures, only trends significant at $p<0.05$ based on an ordinary least squares regression test are shaded.

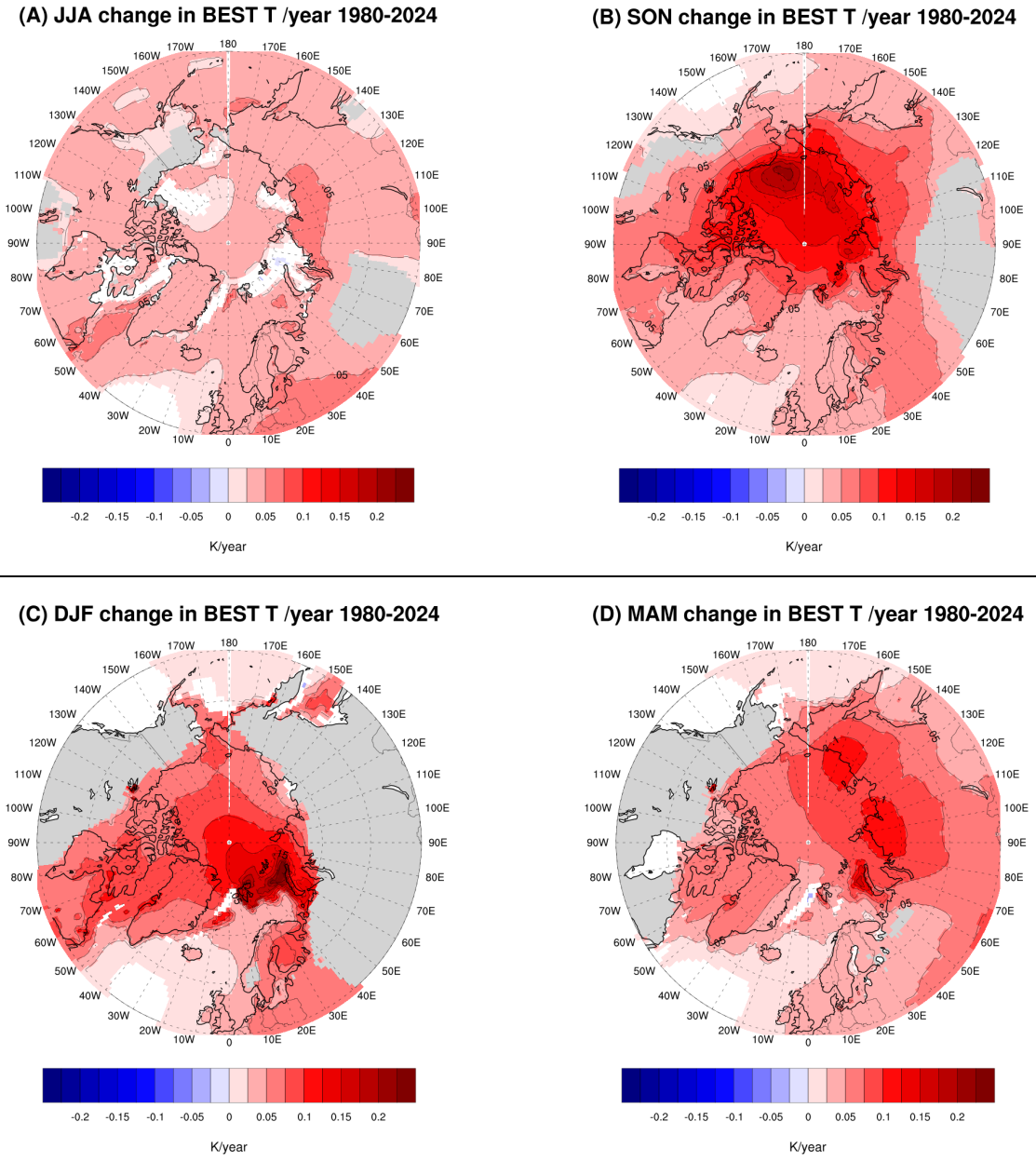

Figure S1: Linear trends in surface temperature from the BEST dataset by season from 1980 to 2024, in degrees per year for (A) June, July, August (JJA), (B) September, October, November (SON), (C) December, January, February (DJF)

and (D) March, April, May (MAM). Only trends significant at p<0.05 are shaded based on an ordinary least squares regression test.

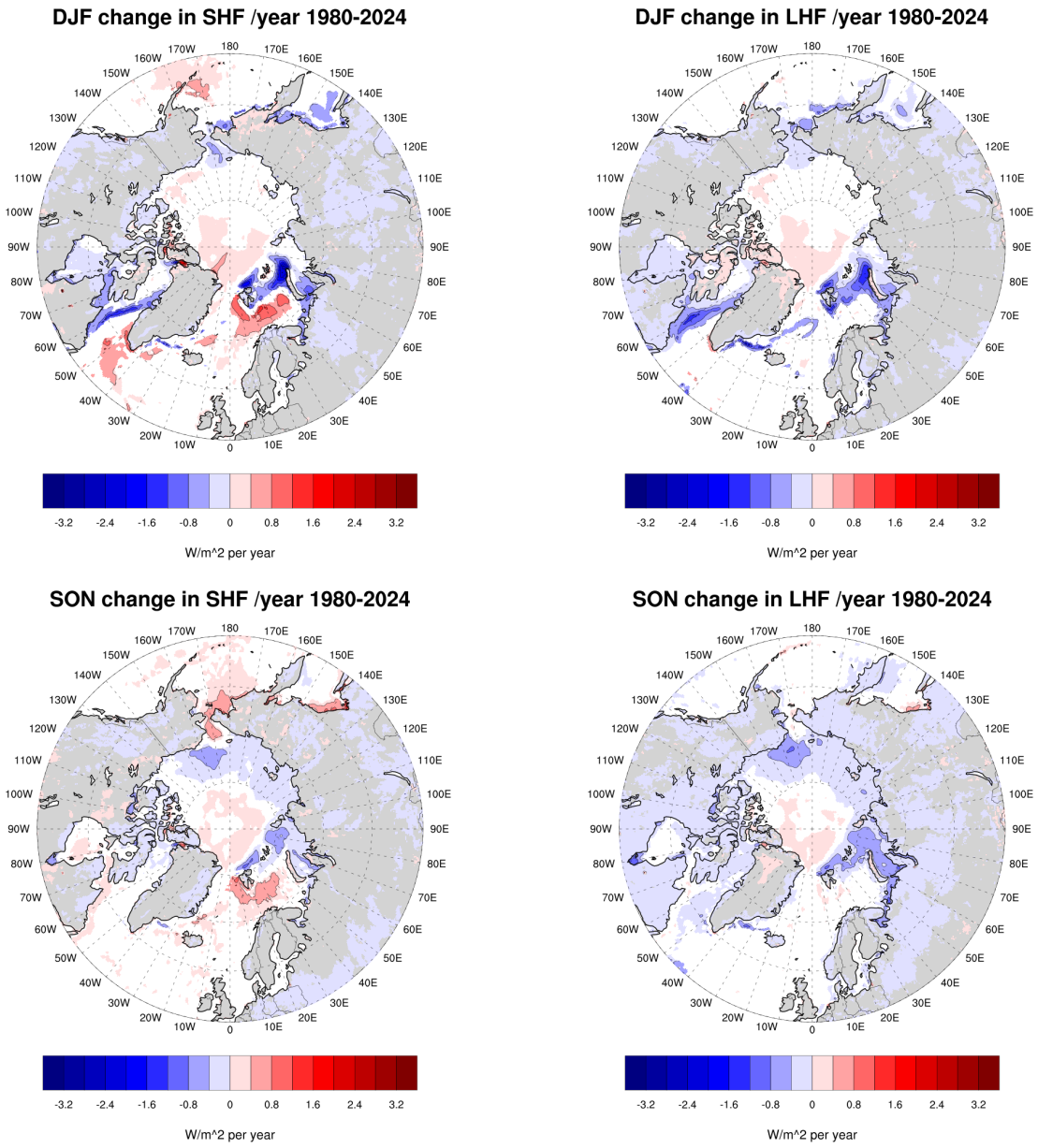

Figure S2: Linear trends in surface sensible heat flux (SHF) and latent heat flux (LHF) for winter (December, January, and February (DJF); top row) and autumn (September, October, November (SON); bottom row). Fluxes from the atmosphere to the surface are positive. Only trends significant at p<0.05 are shaded based on an ordinary least squares regression test.

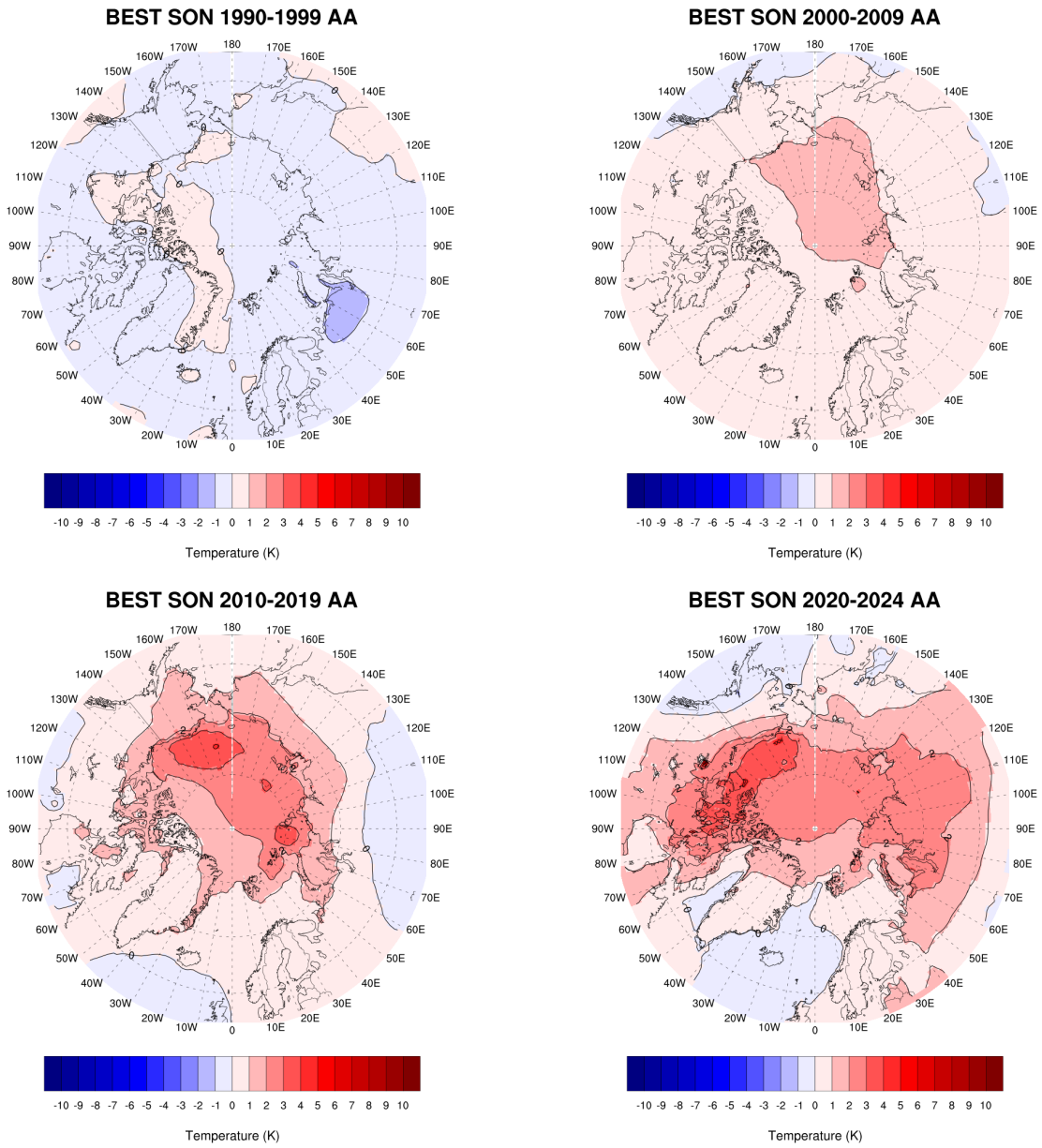

Figure S3. Autumn (September, October, November (SON)) BEST 2-m temperature anomalies in ºC relative to 1981-2010 for 1990-1999, 2000-2009, 2010-2019 and 2020-2024 minus the global average temperature anomaly for each period.

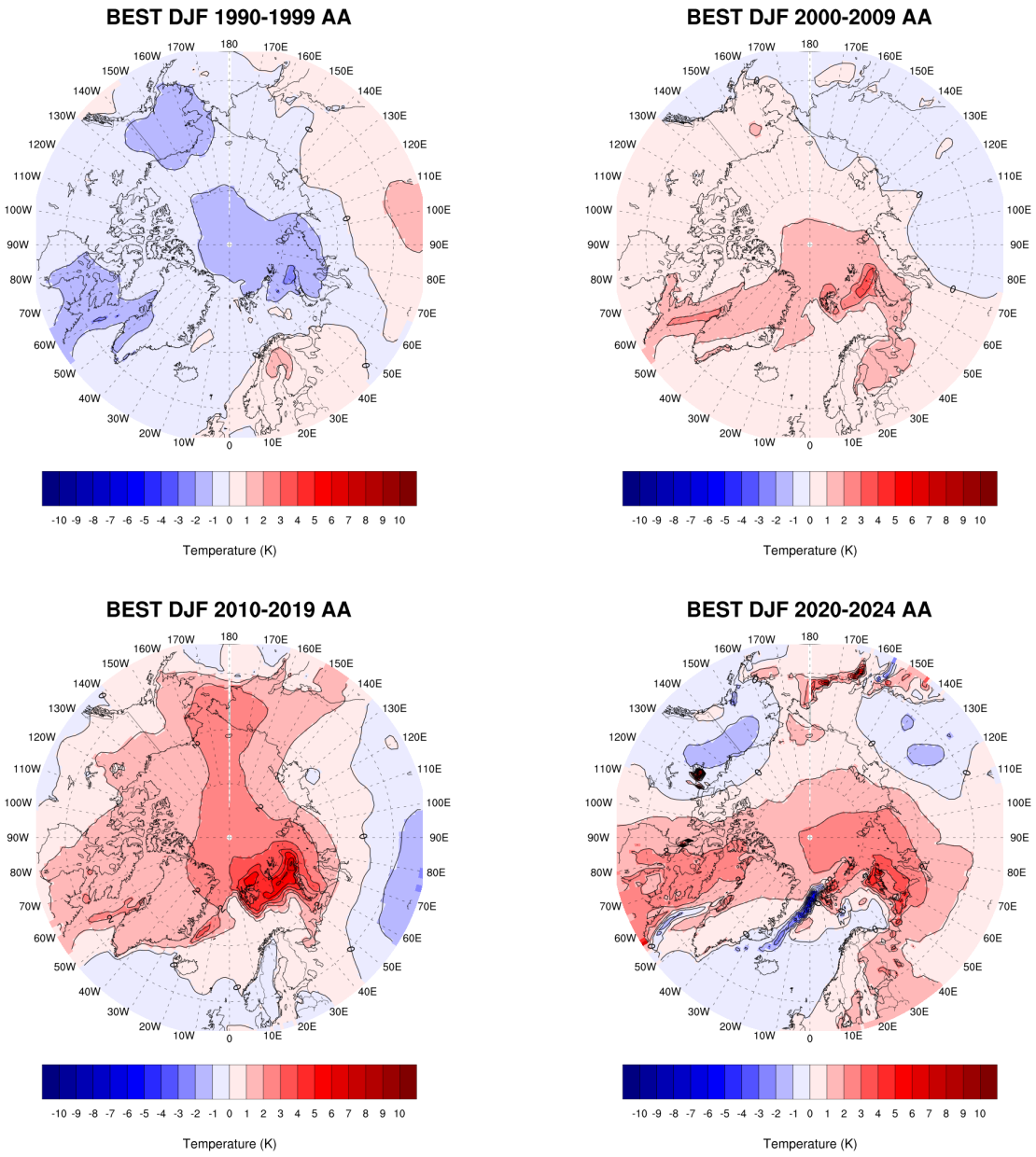

Figure S4. Winter (December, January, February (DJF)) BEST 2-m temperature anomalies in ºC relative to 1981-2010 for 1990-1999, 2000-2009, 2010-2019 and 2020-2024 minus the global average temperature anomaly for each period.