Journal of Southern Hemisphere Earth Systems Science
doi:10.1071/ES21002

Supplementary material for

Future changes in stratospheric quasi-stationary wave-1 in the extratropical southern hemisphere spring and summer as simulated by ACCESS-CCM

Kane A. Stone[A,B,C,E], *Andrew R. Klekociuk*[A,D] *and Robyn Schofield*[A,B]

[A]School of Geography, Earth, and Atmospheric Sciences, University of Melbourne, Melbourne, Australia.

[B]ARC Centre of Excellence for Climate System Science, Sydney, Australia.

[C]Present address: The Department of Earth, Atmospheric and Planetary Sciences, Massachusetts Institute of Technology, Cambridge, Massachusetts 02139-4307, USA.

[D]Australian Antarctic Division, Hobart, Australia.

[E]Corresponding author. Email: stonek@mit.edu

Figure S1 shows the 50 and 500 hPa zonal wave 1 phase shift over the 1960–2000 and 2001–2100 periods associated with the regression model fit to the REF-C2, SEN-C2-fODS and SEN-C2-fGHG simulations. Figure S2 shows the same for wave 1 amplitude.

It is seen that the 50 hPa temperature zonal wave 1 phase changes closely resemble that in TCO. The GHG induced decrease in the amplitude of the zonal wave 1 during summer is likely caused by a similar decrease in the amplitude of the tropospheric 500 hPa temperature zonal wave 1.

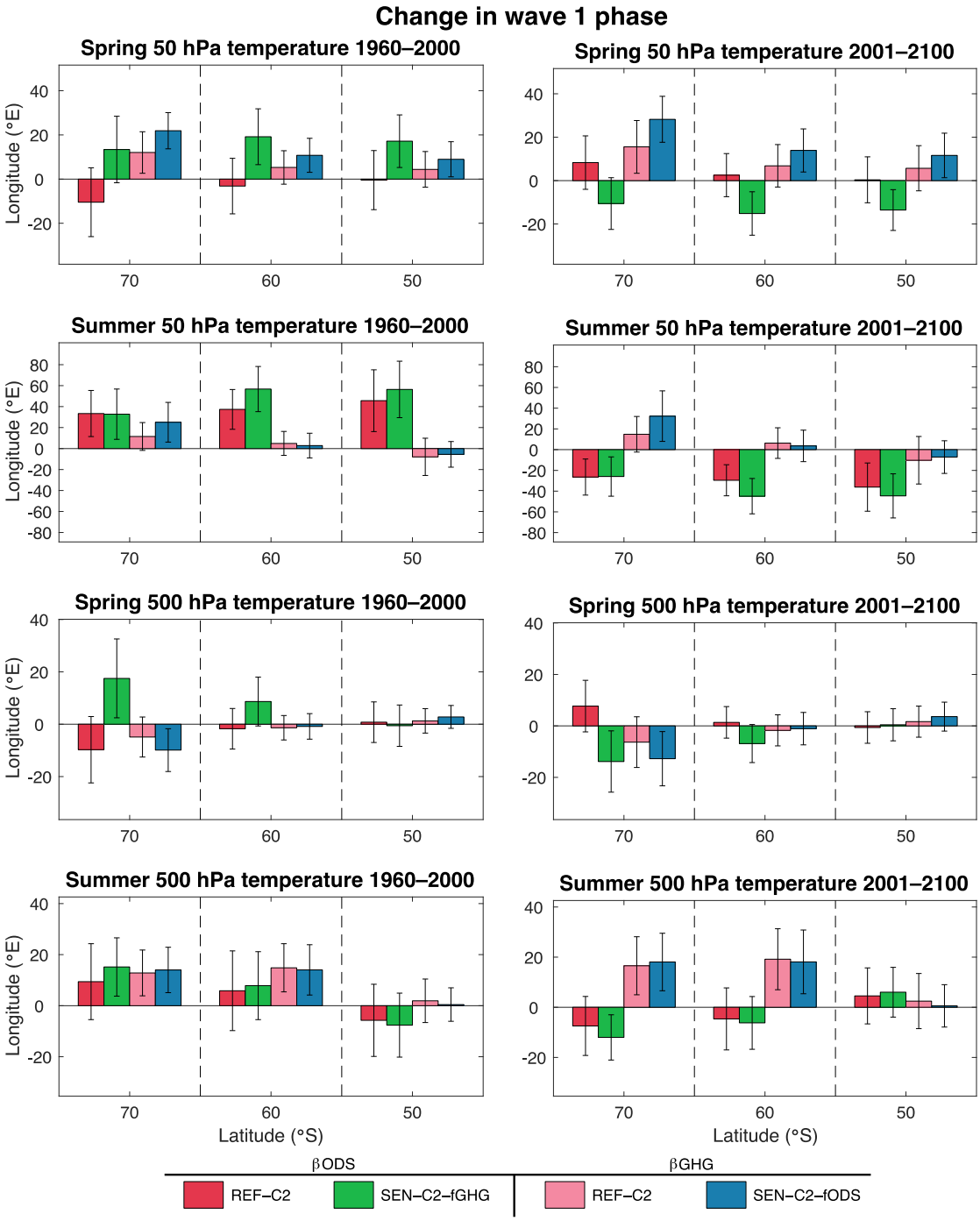

Figure S1. Changes in the zonal wave 1 regression fits and 95% confidence intervals for spring and summer 50 and 500 hPa temperature over 1960–2000 and 2001–2100.

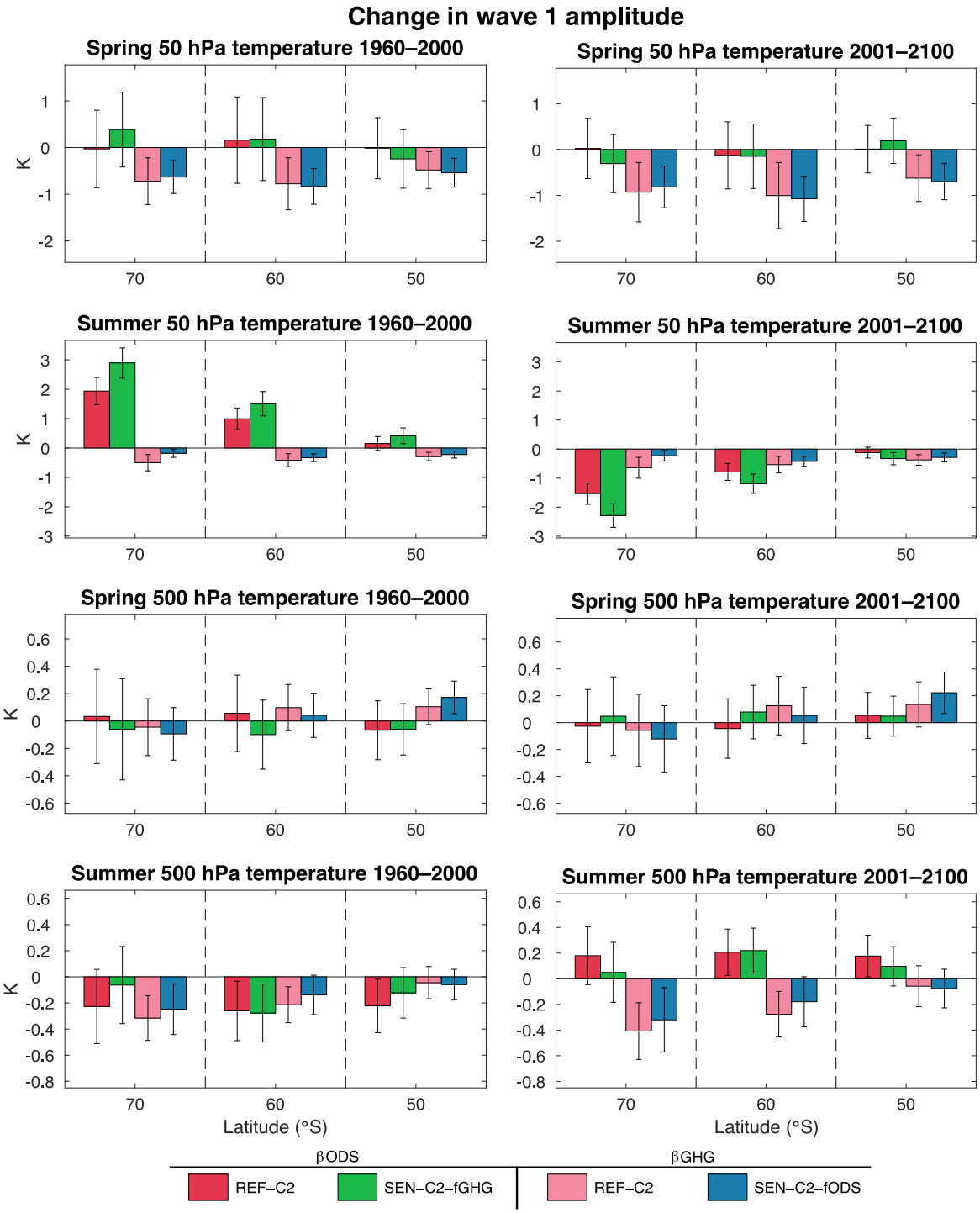

Figure S2. Same as Fig. S1, but for amplitude.