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## Impact of Stratospheric Ozone on the Subseasonal Prediction in the Southern Hemisphere Spring

Jiyoung Oh<sup>1,2</sup>, Seok-Woo Son<sup>2</sup>, Jung Choi<sup>1</sup>, Eun-Pa Lim<sup>3</sup>, Chaim Carfinkel<sup>4</sup>, Harry Hendon<sup>3</sup>, Yoonjae Kim<sup>2</sup>, and Hyun-Suk Kang<sup>2</sup>

<sup>1</sup>Seoul National University, School of Earth and Environmental science, Seoul, Korea, Republic of (projy001@snu.ac.kr)

<sup>2</sup>Korea Meteorological Administration, Seoul, Republic of Korea

<sup>3</sup>Bureau of Meteorology, Melbourne, Australia

<sup>4</sup>The Fredy and Nadine Herrmann Institute of Earth Sciences, Hebrew Univ. Israel

Antarctic ozone has been regarded as a major driver of the Southern Hemisphere (SH) circulation change in the recent past. Here, we show that Antarctic ozone can also affect the subseasonal-to-seasonal (S2S) prediction during the SH spring. Its impact is quantified by conducting two reforecast experiments with the Global Seasonal Forecasting System 5 (GloSea5). Both reforecasts are initialized on September 1st of each year from 2004 to 2020 but with different stratospheric ozone: one with climatological ozone and the other with year to-year varying ozone. The reforecast with climatological ozone, which is common in the operational S2S prediction, shows the skill re-emergence in October after a couple of weeks of no prediction skill in the troposphere. This skill re-emergence, mostly due to the stratosphere-troposphere dynamical coupling, becomes stronger in the reforecast with year to-year varying ozone. The surface prediction skill also increases over Australia. This result suggests that a more realistic stratospheric ozone could lead to improved S2S prediction in the SH spring.