

Name: Jee-Hoon Jeong
jjeehoon@jnu.ac.kr
Chonnam National University
Faculty of Earth Systems & Environmental Sciences
Country: Republic of Korea

Title: Impacts of Snow Initialization on Subseasonal Forecasts of Surface Air Temperature

Additional authors: Taehyoun Shim (1), Baek-Min Kim (1), Seong-Joong Kim (1), Hans W. Linderholm (2), Deliang Chen (2), Chris Folland (2, 3)

Additional Affiliations: 1. Korea Polar Research Institute, 2. University of Gothenburg, Sweden, 3. Met Office Hadley Centre

Abstract:

The present study examines the impacts of snow initialization on surface air temperature by a number of ensemble seasonal predictability experiments using the NCAR Community Atmosphere Model with and without snow initialization. The study attempts to isolate snow signals on surface air temperature. The Canadian Meteorological Center (CMC) daily snow depth analysis was used in defining initial snow states, where anomaly rescaling was applied in order to account for the systematic bias of the CAM3 snow depth with respect to the CMC analysis. Two suites of seasonal ensemble hindcasts starting at each month in the colder part of the year with and without the snow initialization were performed for 12 recent years (1999;©2010), and the predictability skill of surface air temperature was estimated. Results show that considerable potential predictability increases up to 2 months ahead can be attained using snow initialization. Relatively large increases are found over East Asia, western Russia, and western Canada in the later part of this period.

End