EMS Annual Meeting Abstracts
Vol. 10, EMS2013-669-1, 2013
13th EMS / 11th ECAM

Influence of spring-time snow over the Himalayan-Tibetan Plateau and Eurasia on the evolution of the Indian summer monsoon

R. Senan (1) and Y. J. Orsolini (2)

(1) Department of Geosciences, University of Oslo, Oslo, Norway (retish.senan@geo.uio.no, +47-22854232), (2) Norwegian Institute for Air Research, Kjeller, Norway

The spring-time snowpack over the Himalayan-Tibetan Plateau region and Eurasia has been suggested to be an influencial factor in the seasonal predictability of the Indian Summer Monsoon. However, many observational and modelling studies remain inconclusive as to the reliability and the stationarity of this snow-monsoon relationship, and the nature of the spatio-temporal teleconnection patterns involved.

In this study, we revisit this snow-monsoon relationship using recent reanalyses datasets such as the ECMWF ERA-Interim and ERA-Interim land model re-analyses, and the NOAA 20th Century Reanalysis Project. We examine the stationarity of the snow-monsoon relationship over the years and its association with major climatic modes like ENSO.

Further, we explore the impact of accurate snow initialization on the seasonal predictability of the Indian Summer Monsoon, using twin sets of retrospective coupled ocean-atmospheric simulations with the European Centre for Medium-Range Weather Forecasts (ECMWF) ensemble forecasting system.