EGU21-15990
https://doi.org/10.5194/egusphere-egu21-15990
EGU General Assembly 2021

Impact of Horizontal Resolution on Indian Summer Monsoon in coupled Atmosphere-Ocean Regional Model over CORDEX-SA

Pankaj Kumar[1], Alok Kumar Mishra[1], Aditya Kumar Dubey[1], Md. Saquib Saharwardi[1], and Dimitry Sein[2]

[1]Indian Institute of Science Education and Research Bhopal India, Department of Earth and Environmental Sciences, Bhopal, India (kumarp@iiserb.ac.in)

[2]Shirshov Institute of Oceanology, Russian Academy of Sciences; Moscow, Russia

The correct representation of air-sea coupling is crucial towards improving the Indian summer monsoon. In this study, a coupled atmosphere-ocean regional model ROM is employed to investigate the impact of horizontal resolution (0.44^0 and 0.22^0) in simulating the mean Indian summer monsoon characteristics and associated dynamical and thermodynamical processes. Regional model, REMO, and global ocean model, MPIOM is taken as atmospheric and ocean components of the coupled system. Interestingly, ROM at both resolutions performs well in simulating the mean monsoonal characteristics. However, increasing horizontal resolution from 0.44^0 to 0.22^0 adds value in simulating the JJAS mean precipitation by reducing the biases both over ocean and land. The detailed results from the analysis will be discussed in the general assembly.

Keywords: Indian summer monsoon, coupled regional model, horizontal-resolution, CORDEX-SA

Acknowledgement: This work is jointly supported by the Department of Science and Technology (DST), Govt. of India, grant number DST/INT/RUS/RSF/P-33/G and the Russian Science Foundation (Project No.: 19-47-02015).