

Accepted Manuscript

Research papers

Spatial connections in Regional Climate Model rainfall outputs at different temporal scales: Application of network theory

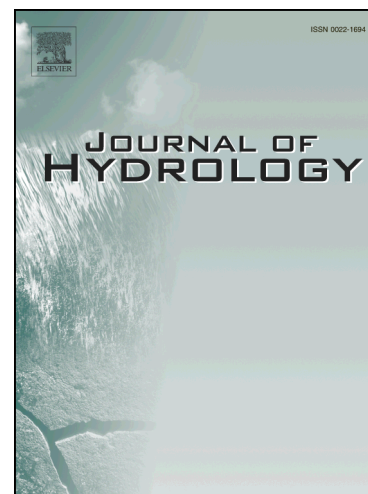
Ihsan Naufan, Bellie Sivakumar, Fitsum M. Woldemeskel, Srivatsan V. Raghavan, Minh Tue Vu, Shie-Yui Liong

PII: S0022-1694(17)30318-9

DOI: <http://dx.doi.org/10.1016/j.jhydrol.2017.05.029>

Reference: HYDROL 22020

To appear in: *Journal of Hydrology*



Please cite this article as: Naufan, I., Sivakumar, B., Woldemeskel, F.M., Raghavan, S.V., Vu, M.T., Liong, S-Y., Spatial connections in Regional Climate Model rainfall outputs at different temporal scales: Application of network theory, *Journal of Hydrology* (2017), doi: <http://dx.doi.org/10.1016/j.jhydrol.2017.05.029>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Spatial connections in Regional Climate Model rainfall outputs at different temporal scales: Application of network theory

Ihsan Naufan¹, Bellie Sivakumar^{1,2,*}, Fitsum M. Woldemeskel¹, Srivatsan V. Raghavan³,
Minh Tue Vu^{3,4}, Shie-Yui Liong^{3,5}

¹School of Civil and Environmental Engineering, The University of New South Wales,
Sydney, NSW 2052, Australia

²Department of Land, Air and Water Resources, University of California, Davis, CA 95616,
USA

³Tropical Marine Science Institute, National University of Singapore, Singapore 119227,
Singapore

⁴Glenn Department of Civil Engineering, Clemson University, Clemson, SC 29634, USA

⁵Willis Research Network, Willis Re Inc., London, EC3M 7DQ, United Kingdom

*Corresponding author: E-mail: s.bellie@unw.edu.au

Tel.: +61 2 93855072; fax: +61 2 93856139

Abstract

Understanding the spatial and temporal variability of rainfall has always been a great challenge, and the impacts of climate change further complicate this issue. The present study employs the concepts of complex networks to study the spatial connections in rainfall, with emphasis on climate change and rainfall scaling. Rainfall outputs (during 1961–1990) from a regional climate model (i.e. Weather Research and Forecasting (WRF) model that downscaled the European Centre for Medium-range Weather Forecasts, ECMWF ERA-40 reanalyses) over Southeast Asia are studied, and data corresponding to eight different temporal scales (6-

Download English Version:

<https://daneshyari.com/en/article/8895239>

Download Persian Version:

<https://daneshyari.com/article/8895239>

[Daneshyari.com](https://daneshyari.com)