1106-92-1294 **Kehinde Rilwan Salau*** (krsalau@email.arizona.edu), **Jacopo A Baggio**, **Eli P Fenichel**, **Marco A Janssen** and **Joshua K Abbott**. *Taking a moment to measure networks – A hierarchical approach.*

Network-theoretic tools contribute to understanding real-world system dynamics, e.g., in epidemics, power outages, and wildlife conservation. Network visualization helps illustrate structural heterogeneity; however, details about heterogeneity are lost when summarizing networks with a single mean-style measure. Researchers have indicated that a hierarchical system composed of multiple metrics may be a more useful determinant of structure, but a formal method for grouping metrics is still lacking. We develop a hierarchy using the statistical concept of moments and systematically test the hypothesis that simple metrics are sufficient to explain the variation in processes that take place on networks, using an ecological systems example. Results indicate that the moments approach outperforms single summary metrics and accounts for a majority of the variation in process outcomes. The hierarchical measurement scheme is helpful for indicating when additional structural information is needed to describe system process outcomes. (Received September 11, 2014)