

1145-68-1902

Hyunsun Lee* (hlee@hpu.edu), **Yi Zhu** and **Brian Spain**. *Adaptive Data Dissemination for Wireless Ad Hoc Networks based on Stochastic Branching Process.*

In this study, we adapt a stochastic branching process to develop a routing method for wireless ad hoc networks. The stochastic branching model is often used to describe the beginning stage of a disease outbreak when the number of infected patients remains significantly smaller than the entire population. The network of individual contacts and transmissions are focused in the branching process model. The importance of the method is placed on the transmission rate from one individual to the next generation, which guides us to understand the statistical structure along the transmission path. The idea of proposed routing method is based on the similarities between epidemic and data dissemination. Our approach aims at balancing reachability, total node usage, and average branching factor in multi-hop data dissemination by locally regulating the transmission probability and adaptively selecting neighbor nodes. (Received September 24, 2018)