

Simple Models for Two-hop Relay Routing in Ad Hoc Networks

Irma Aslanishvili

e-mail: irma.aslanishvili@tsu.ge

Department of Computer Science
Iv. Javakhishvili Tbilisi State University
11 University St., 0186 Tbilisi, Georgia

Abstract-We study mobile communication of networks, the ad hoc networks, has attracted significant attention due to its challenging research problems. Ad hoc networks are complex distributed systems that consist of wireless mobile or static nodes that can freely and dynamically self-organize. We have shown the behavior of the relay buffer of the two-hop relay routing in mobile ad hoc networks by developing a queuing model. The parameters of the queuing model depend on the node mobility pattern. The main finding is that the expected relay buffer size depends on the expectation and the variance of the nodes contact time. Such analysis is done for the one dimensional random walk over a circle..

Key words: Ad Hoc Networks, MANETs protocols, Routing protocols, packet, source node, Relay routing, finite memory, Relay Buffer (RB), Destination.