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## Abstract

Mobile ad-hoc networks (MANETs) are self-organizing networks which can form a communication network without any fixed infrastructure. Constant bit rate (CBR) traffic pattern is very well known traffic model for MANETs which generates data packets at a constant rate. Transmission Control Protocol (TCP) provides reliability to data transferring in all end-to-end data stream services on the MANETs. There are several TCP traffic patterns such as TCP Reno, TCP New Reno, TCP Vegas, and TCP Selective Acknowledgment (Sack). The traffic pattern plays an important role in so far as the performance of a routing protocol is concerned. In this paper, we study the effect of impact of mobility models and traffic patterns on the behavior of Reactive (AODV) and Proactive (DSDV, OLSR) routing protocols used in MANETs considering both CBR and TCP traffic patterns with different mobility models namely, Reference

Point Group Mobility (RPGM) and Manhattan Grid (MG). The performance metrics used to evaluate the efficiency of the considered protocols are packet delivery ratio, average throughput and End-to-End Delay. The experimental results conducted using NS2 simulator show that the relative ranking of routing protocols may vary depending on both mobility models and traffic patterns.

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**Index Terms**

Networks

**Keywords**

MANETs; TCP traffic pattern; CBR traffic; Routing protocols; Manhattan Grid; Reference Point Group Mobility Model.