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## Abstract

Transport Control Protocol (TCP), the mostly used transport protocol, performs well over wired networks. As much as wireless network is deployed, TCP should be modified to work for both wired and wireless networks. Since TCP is designed for congestion control in wired networks, it cannot clearly detect non-congestion related packet loss from wireless networks. TCP Congestion control plays the key role to ensure stability of the Internet along with fair and efficient allocation of the bandwidth. So, congestion control is currently a large area of research and concern in the network community. Many congestion control mechanisms are developed and refined by researcher aiming to overcome congestion. During the last decade, several congestion control mechanisms have been proposed to improve TCP congestion control. Comparing these mechanisms, showing their differences and their improvements, and we identify, classify, and discuss some of these mechanisms of TCP congestion control such as Tahoe, Sack, Reno, NewReno, Vegas, and Westwood. TCP Westwood works for both wired and wireless network, and we propose a new algorithm called TCP WestwoodNew to increase the performance of TCP-Westwood. By enhanced the congestion avoidance of TCP Westwood by a new estimation to cwnd algorithm based on the network status. Also TCP WestwoodNew introduces a new estimation for Retransmission TimeOuts (RTO). RTO has been reported to be a problem on network paths involving links that are prone to sudden delays due to various reasons. Especially many wireless network technologies contain such links. Spurious RTO

often cause unnecessary retransmission of several segments, which is harmful for TCP performance, and unnecessary retransmissions can be avoided. We simulate the proposed algorithm TCP WestwoodNew using the well known network simulator ns-2, by comparing it to the original TCP-Westwood. Simulation results show that the proposed scheme achieves better throughput than TCP Westwood and decreases the delay

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## Index Terms

Computer Science Communications

## Keywords
Tcp Congestion Control Mechanisms