



RESEARCH ARTICLE

Avoiding Pollution Attacks in Network Coding using Authentication Code

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Abstract— When packets are transferred they suffer from the different pollution attacks by injecting malicious packets in the network. When pollution attacks occurs that provides greater damage in the network routing. In this paper, we address this issue by designing a secure authentication code that is computed by using different key generation functions and the key is distributed to the intermediate nodes and to the destinations. The proposed scheme allows verifying the integrity of receiving packets not only at destination nodes, but also at intermediate nodes. The packets which fail the verification those are detected and discarded by considering they are malicious packets or polluted packets in the network. In this way, the pollution in the network is removed before packets reaching to the destinations. This will reduce the pollution attacks from the outsiders and increase the throughput and performance of the data transmission in the coding based network.

Key Terms: - Network coding; Pollution attacks; Authentication code; Authentication key generation

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