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Trust Based Detection and Elimination of Packet Drop Attack in the Mobile Ad-Hoc Networks

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Abstract

The mobile ad hoc network (MANET) is communication network of a mobile node without any prior infrastructure of communication. The network does not have any static support; it dynamically creates the network as per requirement by using available mobile nodes. This network has a challenging security problem. The security issue mainly contains a denial of service attacks like packet drop attack, black-hole attack, gray-hole attack, etc. The mobile ad-hoc network is an open environment so the working is based on mutual trust between mobile nodes. The MANETs are vulnerable to packet drop attack in which packets travel through the different node. The network while communicating, the node drops the packet, but it is not attracting the neighboring nodes to drop the packets. This proposed algorithm works with existing routing protocol. The concept of trusted list is used for secure communication path. The trusted list along with trust values show how many times node was participated in the communication. It differentiates between altruism and selfishness in MANET with the help of energy level of mobile components. The trust and energy models are used for security and for the differentiation between altruism and selfishness respectively.

Fig. 1

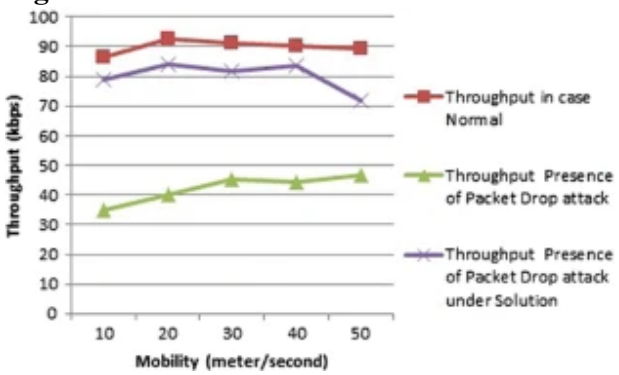
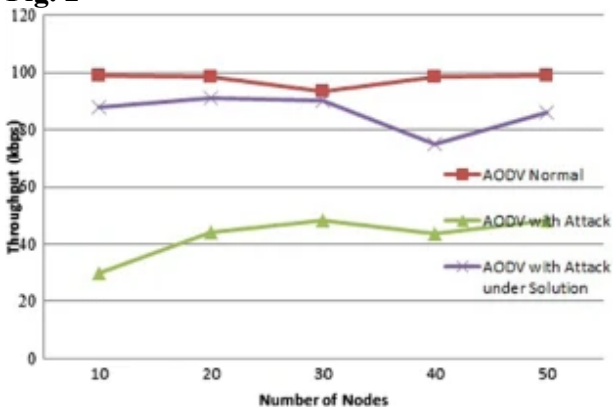


Fig. 2



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Keywords

- Altruism
- Black hole attack
- Denial of service
- Gray-hole attack
- Mobile ad-hoc networks
- Packet drop attack
- Selfishness and trust

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   extended data figure 1

- **Fig. 2**
   extended data figure 2

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