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Orderly and optimal retransmission times network coding algorithm.  (Chinese. English summary) [Zbl 1424.68004]

Summary: In delay-aware wireless multicast networks, due to the packet losses of network terminals, the source node often requires retransmitting the packets. Based on the application of network coding in the process of packet retransmissions, an orderly and optimal retransmission times (OORT) network coding algorithm is proposed. Firstly, the algorithm encodes the packets which correspond to different values of complementary hash value field. Based on the result of the reduced hash value degree, it encodes the packets which the complementary hash value corresponds to. The proposed algorithm creates more encoding opportunities, especially in a low listening probability, so that it reduces the retransmission times and improves the network performance. The simulation results show that the proposed algorithm can significantly reduce the transmission times and delay compared with the COPE algorithm and the HLAR algorithm.

MSC:
68M10 Network design and communication in computer systems
68P30 Coding and information theory (compaction, compression, models of communication, encoding schemes, etc.) (aspects in computer science)

Keywords:
packet loss probability; network coding; retransmission times; delay

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