应用于WLAN的自适应令牌型公平性保障多址接入协议

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摘要　为了提高IEEE 802.11 DCF(Distributed Coordination Function)多址接入协议的性能，提出一种应用于WLAN网络的自适应令牌型公平性保障多址接入协议ATP MAP(Adaptive Token Passing Multiple Access Protocol with fairness guarantee)，通过令牌对发送节点进行排队，减少了网络中不必要的碰撞，同时根据网络的公平性状况自适应调整令牌传递因子p. 详细分析了协议参数对协议性能的影响，并推导出ATP MAP协议的饱和吞吐量极限. 仿真结果表明，和IEEE 802.11 DCF的MAC协议对比，ATP MAP协议提高了网络的饱和吞吐量，同时降低了网络公平性损失.

关键词　WLAN　多址接入　令牌　公平性保障
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A new multiple access protocol for WLAN based on adaptive token passing

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Abstract

<P>We develop a new multiple access protocol ATP MAP(Adaptive Token Passing Multiple Access Protocol with fairness guarantee) for WLAN, to improve the performance of the MAC protocol of IEEE 802. 11 DCF(Distributed Coordination Function). In this protocol, token which lead to the reduction of collisions are used to queue the stations. The token passing parameter p is adjusted adaptively according to the fairness of a newtork. The performance of the protocol is analyzed. The saturation throughput bound of the ATP MAP protocol is given. Simulation results have shown that the proposed scheme can improve the performance of the MAC protocol by providing a higher throughput and a lower loss of fairness.</P>

Key words　WLAN　multiple access　token passing　fairness guarantee

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