基于 time 偏移机制的移动传感网数据中继节点感知优化算法

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摘　要：为解决移动传感网数据传输过程中中继节点转发数据能力较弱，且难以降低数据链路的拥塞水平，易导致网络拥塞的难题，提出了基于 time 偏移机制的移动传感网数据中继节点感知优化算法.首先,通过感知节点拟碰撞过程中的 time 偏移因素,采取级联判断机制,计算最佳数据传输成功率,实现对网络传输链路的筛选；然后根据节点数据成功传输率,通过分析节点的数据接收-发过程，计算数据转发投递阈值，降低了数据转发过程中的时延；随后基于节点自适应感知的方式，在节点存在多条数据传输路径时，通过定义节点缓存拥塞控制规则，优化传输节点的缓存拥塞控制，降低数据链路抖动对传输的影响.仿真实验表明：与 CS_WSN 算法、PR_CARA 算法相比，此算法具有更高的下一跳传输节点的成功投递概率与数据分组传输水平，以及更低的链路拥塞程度，且有效降低了数据传输的时延.

关键词：移动传感网络；Time 偏移; 中继节点感知; 节点缓存拥塞控制; 投递阈值

Data Relay Node Aware Optimization Algorithm of Mobile Sensor

Networks Based on Time Migration Mechanism

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Abstract：In order to solve the data transmission process of mobile sensor network data transmission, the ability to transmit data is weak, and it is difficult to reduce the level of data link, which is easy to cause the problem of network congestion. In this paper, a data relay node aware optimization algorithm for mobile sensor networks based on time migration mechanism is proposed. First of all, through the sensor nodes in the collision process of quasi time migration factors, take based on series parallel calculation of the optimal data transmission success rate, to achieve the initial screening of network transmission link; and then according to the node data delivery success rate, through the analysis of the data receiving node - sending process, data delivery threshold, reduce the delay of data the forwarding process; then based on the adaptive node perception, there are multiple paths to transmit data in the node, the perception of the optimal transmission path and a suboptimal transmission path as the optimal transmission path to the backup cache, optimize the transmission congestion control node, reduce the effect of jitter on data link transmission. Simulation results show that compared with the CS algorithm in WSN, PR Cara algorithm, algorithm in this paper has higher next hop node transmission success delivery probability and data packet transmission level, and lower the degree of link congestion, effectively reducing the data transmission delay.

Key words：mobile sensor networks; time migration; relay node aware; node buffer congestion control; delivery threshold

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