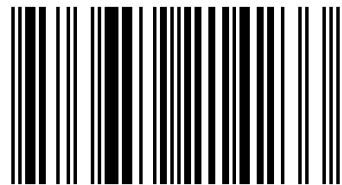The standard Optimized Link State Routing (OLSR) introduces an interesting concept, the multipoint relays (MPRs), to mitigate message overhead during the flooding process. This book provides a new algorithm for MPRs selection to enhance the performance of OLSR using Particle Swarm Optimization Sigmoid Increasing Inertia Weight (PSOSIIW). The sigmoid increasing inertia weight has significance improve the particle swarm optimization (PSO) in terms of simplicity and quick convergence towards optimum solution. The new fitness function of PSO-SIIW, packet delay of each node and degree of willingness are introduced to support MPRs selection in OLSR. The throughput, packet loss and end-to-end delay of the proposed method are examined in simulation and experiment. Overall results indicate that OLSR-PSOSIIW has shown good performance compared to the standard OLSR and OLSR-PSO, particularly for the throughput and end-to-end delay. Generally the proposed OLSR-PSOSIIW shows advantage of using PSO for optimizing routing paths in the MPRs selection algorithm.

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Routing Optimization Scheme in Wireless Mesh Network

The Implementation of New Particle Swarm Optimization in OLSR

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