A Stable Clustering Algorithm based on Affinity Propagation for VANETs

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Abstract— this paper proposes a stable clustering algorithm based on Affinity Propagation (AP) for Vehicular Ad Hoc Networks (VANETs). In VANETs, vehicles share information for the safe and efficient driving by Dedicated Short Range Communications (DSRC). We present a trajectory-based clustering algorithm for VANETs using AP clustering technique. Our proposed algorithm considers vehicle trajectories to form more stable clusters. Simulation results show the better presentation of our algorithm. The performance of proposed algorithm is measured via cluster life time by choosing appropriate cluster head.

Keyword—   Vehicular ad hoc network (VANET), Affinity Propagation (AP), clustering, trajectory, stability.

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