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Abstract

Wireless (magnetic) sensor networks offer a very attractive alternative to inductive loops for vehicular traffic control on freeways and at intersections in terms of cost, ease of deployment and maintenance, and enhanced measurement capabilities. In this work, we propose and simulate a simple and economic wireless sensor network architecture composed of only a single sensor node per lane, as a replacement to induction loops to be used in intelligent transportation systems. The results show that our work enhances the average vehicular waiting and travel times as compared with fixed-time signals, which produces significant change by a factor of almost 40%.

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Index Terms

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