

KOTSIALOS, A. and PAPAGEORGIU, M. The traffic amelioration potential of freeway network ramp metering control.

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Summary

Recurrent and non-recurrent congestions on freeways may be substantially reduced if today's "spontaneous" infrastructure utilisation is replaced by an orderly, controllable operation via comprehensive application of ramp metering and freeway-to-freeway control, combined with powerful optimal control techniques. This paper first explains why ramp metering can lead to a dramatic amelioration of traffic conditions on freeways. Subsequently, a large-scale example demonstrates the high potential of advanced ramp metering approaches. It is demonstrated that the proposed control scheme is efficient, fair and real-time feasible.