

# Evolutionary Implementation of Optimal Traffic When Values of Time are Unknown\*

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## Abstract

We consider evolutionary implementation of optimal traffic via a price scheme as in Sandholm [Evolutionary Implementation and Congestion Pricing, *Review of Economic Studies* 69 (2002), 667-689]. However, we analyze the opposite case to Sandholm's in which the planner knows the demand functions for travel on one link but he does not know the values of time of potential drivers. We show that the planner can achieve evolutionary implementation of an optimum by adjusting his estimates of value of time so that optimality conditions hold at current traffic. If all potential drivers have the same value of time, the analytical technique used by Sandholm is applicable. However, if the value of time is heterogeneous, it is no longer applicable and we make several additional assumptions to make the implementation possible.

*JEL classification:* C72, D62, R41, R48.

*Keywords:* Congestion; Implementation; Value of time; Evolutionary game theory.

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