Macroscopic Dynamic Traffic Network Control with Drivers’ Route Choice Behavior

**ABSTRACT** - We propose a modeling and solution framework for controlling traffic flow on a potentially large transportation network with the consideration of drivers’ route choice behavior. We introduce such a macroscopic dynamic traffic network control problem and the associated challenges for formulation and solution. We show how the problem may be formulated as a Differential Complementarity System (DCS). We also discuss the solution method of the DCS formulation, which is illustrated using some numerical experiments.

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