

Optimal REroute Strategies for Traffic managEment (ORESTE)

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Abstract

ORESTE is an associated team between OPALE project-team at INRIA and the Mobile Millennium / Integrated Corridor Management (ICM) team at UC Berkeley focused on traffic management. With this project, we aim at processing GPS traffic data with up-to-date mathematical techniques to optimize traffic flows in corridors. More precisely, we seek for optimal reroute strategies to reduce freeway congestion employing the unused capacity of the secondary network. The project uses macroscopic traffic flow models and a discrete approach to solve the corresponding optimal control problems. The overall goal is to provide constructive results that can be implemented in practice.

The talk will first briefly review the main macroscopic mathematical models for traffic flow, as well as the associated numerical schemes used to compute their solutions. The second part will be devoted to the description of the results achieved in the Mobile Millennium project and the ongoing research carried out by ICM.