



Séminaire conjoint / Joint Seminar
Chaire de recherche du Canada en logistique et en transport et
Chaire de recherche du Canada en distributique



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Adaptive Routing and Recharging Policies for Electric Vehicles

Abstract: Planning a trip with an electric vehicle requires consideration of both battery dynamics and the availability of charging infrastructure. Recharging costs for an electric vehicle, which increase as the battery's charge level increases, are fundamentally different than refueling costs for conventional vehicles, which do not depend on the amount of fuel already in the tank. Furthermore, the viability of any given route is sensitive to the availability of charging stations along the way. In this work, we study the problem of finding an optimal routing and recharging policy for an electric vehicle in a grid network. We develop and analyze a variety of models depending on the amount and timing of information available to the EV driver while traveling. A numerical study demonstrates the performance and solution quality of our algorithms using simulated urban charging infrastructure networks.

Note: Irina Dolinskaya's is Assistant Professor at the Department of Industrial Engineering and Management Sciences of McCormick School of Engineering and Applied Science. Her research is in the field of transportation science and logistics with focus on adaptive modeling and solution approaches to integrate dynamic real-time information. Her current primary applications are in: humanitarian logistics, optimal vessel performance, and electric vehicle routing.

Professor Dolinskaya is the winner of the INFORMS Transportation Science & Logistics Society Dissertation Prize and the 2008 recipient of the Bonder Scholarship for Applied Operations Research in Military Applications. She has also been recognized for her teaching with IEMS Graduate Teaching Award (2011) and Northwestern Associated Student Government Faculty Honor Roll (2012), as well as for her advising with Cole-Higgins Award for Excellence in Advising (2014).

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Université de Montréal

Ouvert à tous / Open to all

Organisateur / Organizer
Marie-Ève Rancourt

