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Hamilton-Jacobi equations for optimal control on networks with entry costs

Manh-Khang DAO
Université de Rennes 1

Résumé. We consider an optimal control on networks in the spirit of the works of Achdou et al. (2013) and Imbert et al. (2013). The main new feature is that there are entry costs at the edges of the network leading to a possible discontinuous value function. We characterize the value function as the unique viscosity solution of a new Hamilton-Jacobi system. The uniqueness is a consequence of a comparison principle for which we give two different proofs, one with arguments from the theory of optimal control inspired by Achdou et al. (2014) and one based on partial differential equations techniques inspired by a recent work of Lions and Souganidis (2016).

Mots-clefs : Optimal control, networks, Hamilton-Jacobi equation, viscosity solutions, uniqueness, switching cost

Références

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