



Quantitative homogenization of state-constraint Hamilton–Jacobi equations on perforated domains and applications

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We first summarize the recent development of qualitative and quantitative homogenization theory for periodic Hamilton–Jacobi equations. Then, we focus on a more recent topic of state-constraint Hamilton–Jacobi equations on perforated domains. We establish the optimal convergence rate in the convex setting. Moreover, we then consider a dilute situation in which the holes’ diameter is much smaller than the microscopic scale. Finally, a homogenization problem with domain defects where some holes are missing is analyzed. This is a joint work with Yuxi Han, Wenjia Jing, Hung V. Tran.