Homogenization Results for a Deterministic Multi-domains Periodic Control Problem

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joint work with *Guy Barles, Ariela Briani,* and *Emmanuel Chasseigne*

Abstract

We consider periodic homogenization problems in the framework of deterministic optimal control when the dynamics and running costs are completely different in two (or more) complementary domains of the space $\mathbb{R}^N$. For such optimal control problems, Guy Barles, Ariela Briani and Emmanuel Chasseigne have shown in [1] and [2] that several value functions can be defined, depending, in particular, of the choice is to use only "regular strategies" or to use also "singular strategies". In [3] we study the homogenization problem in these two different cases. It is worth pointing out that, if the second one can be handled by usual partial differential equations method "à la Lions-Papanicolaou-Varadhan" with suitable adaptations, the first case has to be treated by control methods (dynamic programming).

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References

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