

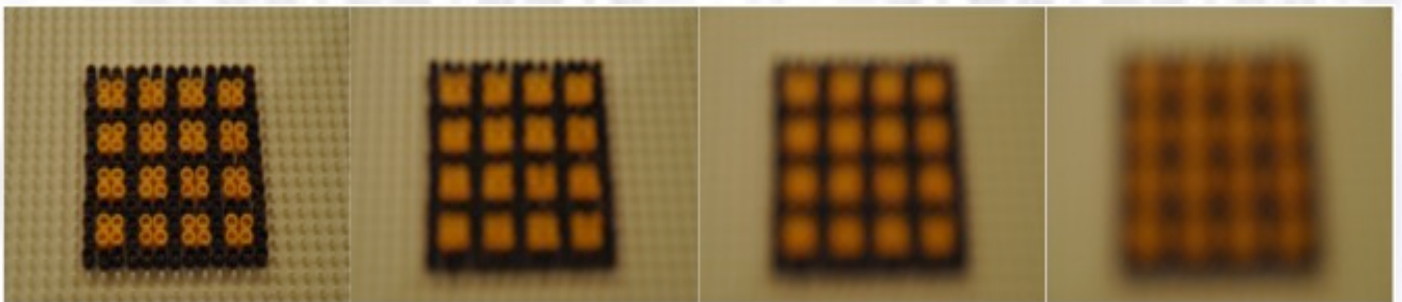
第3回 現象数理学特別講義

Crash-course on multiscale techniques:
A quick introduction to periodic homogenization

マルチスケール速修コース: 周期均質化法

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日時: January 31 Fri . 14:40-16:10(1)
16:20-17:50(2)
February 1 Sat. 14:40-16:10(3)
16:20-17:50(4)

場所: 明治大学 中野キャンパス 6階MIMS研究セミナー室3

This mini-course aims at introducing graduate students and researchers, potentially willing to approach multiscale questions in their future work, to basic questions and techniques of the periodic homogenization applied to linear elliptic equations posed in both homogeneous and perforated domains. The course is self-contained in the sense that the needed mathematical background is introduced during the lectures. We essentially employ concepts like the formal two-scale (periodic) expansions and the two-scale convergence/compactness of Nguetseng and Allaire for arrays of periodically-distributed microstructures. As a result of this averaging procedure, we obtain macroscopic elliptic equations together with effective coefficients. We explain the methodology by means of simple examples inspired by chemically-active flows in porous media.

