



Numerical Analysis Seminar

Defects in Homogenization Theory and related issues: Materials science and multiscale computational approaches

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Abstract

We review a series of works that address homogenization for partial differential equations with highly oscillatory coefficients.

A prototypical setting is that of periodic coefficients that are locally, or more globally perturbed. We investigate the homogenization limits obtained, first for linear elliptic equations, both in conservative and non-conservative forms, and next for nonlinear equations such as Hamilton-Jacobi type equations. Special emphasis will be placed on the consequences of the above theoretical endeavour on strategies for modeling actual materials and simulating them using multiscale approaches, such as MsFEM methods.

The works presented have been completed in collaboration with a number of colleagues, in particular with Y. Achdou, X. Blanc, P. Cardaliaguet, F. Legoll, P.-L. Lions, A. Lozinski, and R. Biezemans, R. Goudey.

Date:	February 1, 2023 (Wednesday)
Time:	5:00 – 6:00pm
Venue:	ZOOM: https://hku.zoom.us/j/ Meeting ID: 913 6532 3891 Password: 310656

All are welcome