



Numerical Analysis Seminar

Homogenization of linear elliptic equations in nondivergence-form: optimal convergence rates and numerical homogenization

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Abstract

This talk presents recent progress in the analysis and the finite element approximation of periodic homogenization problems of the form $A(\frac{x}{\varepsilon}) : D^2 u_\varepsilon = f$ subject to a homogeneous Dirichlet boundary condition. In the first part of the talk, we discuss optimal rates for the convergence of u_ε to the solution of the homogenized problem in L^∞ and $W^{1,p}$ norms, and we present a $W^{2,p}$ corrector estimate. These results are used in the second part of the talk to construct and analyze a finite element method for the approximation of such problems. This talk is based on work with Hung Tran (University of Wisconsin-Madison), and work with Yves Capdeboscq (Université de Paris, Sorbonne Université) and Endre Süli (University of Oxford).

Date: December 7, 2021 (Tuesday)

Time: 4:00 – 5:00pm (Hong Kong Time)

Venue: Room 210, Run Run Shaw Bldg., HKU
and

ZOOM: <https://hku.zoom.us/j/>

Meeting ID: 913 6532 3891

Password: 310656



Attendance limited
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All are welcome