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Course on the

Homogenization of elliptic equations

François Murat (Paris)

May 23 – 27, 2011, University of Bielefeld

Contents:

- Motivation
- The case of dimension one and of layered materials
- The main theorem: from any sequence of equi-coercive and equi-bounded matrices, one can extract a subsequence which H-converges
- Compensated compactness
- The corrector result; applications
- The linearized elasticity system
- The periodic case
- The monotone case
- Perforated domains with periodic holes and Neumann boundary condition

The course will not require anything but the standard knowledge of the basic objects used to solve elliptic boundary value problems using Lax-Milgram lemma, Sobolev spaces and weak convergence. All the proofs will be given in detail.

The course will take place in D5-153 on the Campus of the University of Bielefeld (Universitätsstraße 25, 33615 Bielefeld) with the following timetable:

Monday, May 23: 16:00 - 18:00,
Tuesday, May 24: 10:00 - 12:00,
Wednesday, May 25: 10:00 - 12:00,
Thursday, May 26: 16:00 - 18:00,
Friday, May 27: 12:00 - 14:00.

Everybody is welcome to attend.

Funding: Bielefeld University, Stochastics and Real World Models, International Graduate College

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