



WESTFÄLISCHE
WILHELMS-UNIVERSITÄT
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Mathematische Institute der WWU – Kolloquium Wilhelm Killing

Looking for the hot spot: homogenization of a convection-diffusion equation.

Professor Gregoire Allaire (Ecole Polytechnique, Palaiseau)
Donnerstag, den 14.06.2012, 16:30 Uhr, Hörsaal M 5

We consider the homogenization of a non-stationary convection-diffusion equation posed in a bounded domain with periodically oscillating coefficients and homogeneous Dirichlet boundary conditions. Assuming that the convection term is large, we give the asymptotic profile of the solution and determine its rate of decay. In particular, it allows us to characterize the “hot spot”, i.e., the precise asymptotic location of the solution maximum which lies close to the domain boundary and is also the point of concentration. Due to the competition between convection and diffusion, the position of the “hot spot” is not always intuitive as exemplified in some numerical tests. (joint work with I. Pankratova and A. Piatnitski)

Tee wird ab 16:00 Uhr im Sitzungszimmer SR 0 des Mathematischen Instituts serviert.

Fachbereich 10
Mathematik und Informatik
<http://wwwmath.uni-muenster.de>

