

# **Oberwolfach Seminar: Stochastic Homogenization**

## **Date:**

September 6th - September 12th, 2015

## **Organizers:**

I. Kim, UCLA

J.-C. Mourrat, ENS Lyon

F. Otto, MPI Leipzig

P. Sougandis, The University of Chicago

## **Programme:**

An introduction into stochastic homogenization of partial differential equations with a special focus on:

Nonlinear problems, in particular Hamilton-Jacobi, interfacial motions and nonlinear elliptic equations; oscillatory boundary conditions.

Probabilistic view upon stochastic homogenization, i. e. random walks in random environments, first passage percolation.

Quantitative aspects of stochastic homogenization, connections to statistical physics and elliptic regularity theory.

## **Introductory reading:**

For a probabilistic view:

M. Biskup, Recent progress on the Random Conductance Model, Probability Surveys, Vol. 8 (2011) 294–373

For the analyst's set-up:

V. V. Jikov, S. M. Kozlov, O. A. Oleinik, Homogenization of Differential Operators and Integral Functionals, Springer 1994, in particular Sections 7.1 and 7.2

## **Deadline for applications:**

July 5th, 2015 (to seminars@mfo.de)