UNIVERSITÄT DES SAARLANDES
Naturwissenschaftlich-Technische Fakultät I
Fachrichtung 6.1 Mathematik

Mathematisches Kolloquium

Am Freitag, dem 14. November 2014 spricht um **15 Uhr ct (!)** im Hörsaal IV der Fachrichtung Mathematik (Gebäude E2 4)

Prof. Dr. Matthias Löwe
Westfälische Wilhelms-Universität Münster

über das Thema:

Reconstruction of random scenery

Abstract: The following problem has its roots in ergodic theory. Nowadays it can be considered as a part of probability theory which is interesting in its own rights. A d-dimensional random scenery is a coloring of the d-dimensional lattice $\mathbb{Z}^d$ with $m \geq 2$ colors. For our purposes this scenery will not be directly observable. The second ingredient we need for the scenery problem is a realization of simple random walk on $\mathbb{Z}^d$, which we cannot observe, either. The entire information we have is the color record of the random walk, i.e. the sequence of colors the random walk reads. The following questions have been asked.

- Can we distinguish two given sceneries by their color record?
- Can we even reconstruct a scenery from the color record we are given?

In this talk I will review results on scenery reconstruction mostly in one and two dimensions by Benjamini, Kesten, Lindenstrauss, and by Matzinger and myself and I will give an idea of what can be said in higher dimensions.

Alle Interessenten sind zum Vortrag herzlich eingeladen.

Kaffee und Tee ab 14.45 Uhr im Konferenzraum der Mathematik (EG – 1.03)

Die Dozenten der Mathematik