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ESI SENIOR RESEARCH FELLOW LECTURES
Summer Term 2011

The Erwin Schrödinger International Institute of Mathematical Physics (ESI) offers the following lectures held by guest speakers of Senior Research Fellows in residence during the summer term 2011. For more information and related literature please visit the ESI home page www.esi.ac.at.

1. **Entropy of the k-free points in n-dimensional lattices**
   Dr. Christian Huck (Universität Bielefeld)
   Lecture: Wednesday, May 4 at 14:00 hrs
   ESI, Erwin Schrödinger Lecture Hall

   Abstract: The k-free points in n-dimensional lattices are examples of uniformly discrete and non-repetitive sets with pure-point diffraction spectrum. It is therefore of interest to ask for more precise information about the irregularity of these sets. We show that they have measure entropy zero but positive patch-counting entropy.

2. **A hexagonal monotile for the Euclidean plane**
   Prof. Dr. Uwe Grimm (Open University, Milton Keynes, UK)
   Lecture: Wednesday, May 11 at 14:00 hrs
   ESI, Erwin Schrödinger Lecture Hall

   Abstract: It has been a long-standing question whether a single prototile exists that tiles the plane without gaps or overlaps, but only non-periodically. Until recently, the closest answer came from a tiling by Roger Penrose from 1995. About a year ago, Joan Taylor from Tasmania discovered a decorated hexagon that does the job, however with nearest and next-to-nearest neighbour rules. This talk reviews the history and the properties of this discovery.

Joachim Schwermer
Scientific Director
ESI

The ESI Senior Research Fellow Programme is supported by the University of Vienna and the Austrian Federal Ministry of Science & Research. The programme is coordinated by Prof. Joachim Schwermer, Fakultät für Mathematik, Universität Wien, Nordbergstraße 15, A-1090 Wien (Joachim.Schwermer@univie.ac.at)