UNIVERSITÄT DES SAARLANDES
Naturwissenschaftlich-Technische Fakultät I
Fachrichtung 6.1 Mathematik

Mathematisches Kolloquium

Am Freitag, dem 25. Oktober 2013 spricht um 14:15 Uhr s.t. im Hörsaal IV der Fachrichtung Mathematik (Gebäude E2 4)

Prof. Dr. Guillaume James
Institut National Polytechnique de Grenoble

über das Thema:

Localized waves in granular crystals

Abstract: Granular crystals consist of a collection of masses (typically steel beads) arranged on a regular lattice and interacting nonlinearly by contact. These systems display different types of nonlinear wave phenomena, such as the formation of localized waves (solitary waves or breathers) after an impact. The wave dynamics is strongly influenced by lattice properties (type of discrete elements, existence of confining potentials, precompression), which opens interesting possibilities to control stress waves. Granular crystals can be modeled by different types of lattice differential equations depending on their structural properties. In particular, one-dimensional granular chains can lead to the Fermi-Pasta-Ulam (FPU) model with Hertzian potential, mixed FPU-Klein-Gordon lattices or the discrete p-Schrödinger equation, a new asymptotic model obtained when confining potentials are present. We will illustrate the rich properties of localized waves in these models through numerical simulations and analytical results.

Der Gast wird von Prof. Herrmann betreut.

Alle Interessenten sind zum Vortrag herzlich eingeladen.

Da am 25.10.2013 mehrere Gäste vortragen, ist der Ablauf wie folgt geplant:
14:15 - 15:15 Vortrag von Prof. G. James
15:15 - 15:45 Kaffee und Tee im Konferenzraum der Mathematik (Erdgeschoss, Raum 1.03)
15:45 - 16:45 Vortrag von Prof. T. Bhattacharyya

Die Dozenten der Mathematik