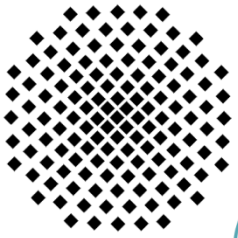
Stuttgarter Physikalisches Kolloquium

Fachbereich Physik, Universität Stuttgart
Max-Planck-Institut für Festkörperforschung
Max-Planck-Institut für Intelligente Systeme

Ansprechpartner: Prof. Harald Giessen
E-Mail: giessen@physik.uni-stuttgart.de
Telefon: 0711 - 685-65111



Dienstag, 31. Mai 2016	17:15 Uhr	Hörsaal V 57.01

Universität Stuttgart, Pfaffenwaldring 57, 70569 Stuttgart-Vaihingen

Gastgeber: Prof. Clemens Bechinger, Universität Stuttgart, Telefon: 0711 - 685-65218

Wetting of complex materials

Stephan Herminghaus
Max-Planck-Institut für Dynamik und Selbstorganisation Göttingen

Abstract

Whether coffee imbibes a sugar cube or cookie, or a fluid is penetrating a filter cake, whether crude oil is expelled from porous rock by injecting water, or carbon dioxide is being deposited in such a formation, the relevant processes can be viewed as wetting a geometrically complex substrate. The fact that the substrate geometry exhibits structure on a wide range of length scales, from the roughness of individual grains to the pore size, the problem appears as intractably complex at first glance. However, a closer look reveals that by carefully choosing the descriptors of the samples, most relevant questions can be answered analytically, using only 'pencil and paper'.

We arrive at quantitatively correct predictions and fundamental insight at the same time, and understand why alternative approaches have not been successful.