

EINLADUNG

zum Vortrag
von

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Chemically-driven hydrodynamic patterns and instabilities

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Dienstag, 3. Mai 2011, um 17:30 Uhr

Ort: Lise-Meitner-Hörsaal, Fakultät für Physik, Universität Wien,
1090 Wien, Strudlhofgasse 4 / Boltzmannngasse 5, 1. Stock

Barrierefreier Zugang: Boltzmannngasse 5, Lift, 1. Stock rechts über den Gang zum Hintereingang des Hörsaals

Abstract:

Chemical reactions can trigger hydrodynamic flows in unstirred solutions by changing physical properties of the fluid such as its density, viscosity or surface-tension for instance. As a corollary, the hydrodynamic flows can in turn affect the yield of the reactions and a highly non-linear feedback between chemistry and hydrodynamics sets then in. Such a coupling is important in numerous industrial applications but also in environmental issues like bioremediation of contaminants in soils or CO₂ sequestration for instance. In practice, these situations are often very intricate and difficult to study *in situ* because of the large number of variables involved and because several different effects (solutal versus thermal effects, density, viscosity versus surface tension effects) may come into play. In this context, I will review recent contributions to the study of chemo-hydrodynamic patterns and instabilities by presenting model systems on which fundamental understanding of the coupling between chemistry and hydrodynamics can be tackled by combined experimental and theoretical approaches.

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