

SEMINAIRE D'ANALYSE

VENDREDI **2 novembre 2018** à 14h15 - *salle* MA A3 31

Le Prof. Mark **GROVES** (Universität des Saarlandes, Allemagne)
donnera un séminaire sur le thème :

« SMALL-AMPLITUDE STATIC PERIODIC PATTERNS AT A FLUID-FERROFLUID INTERFACE »

Abstract:

We establish the existence of static doubly periodic patterns (in particular rolls, squares and hexagons) on the free surface of a ferrofluid near onset of the Rosensweig instability, assuming a general (nonlinear) magnetisation law. A novel formulation of the ferrohydrostatic equations in terms of Dirichlet-Neumann operators for nonlinear elliptic boundary-value problems is presented. We demonstrate the analyticity of these operators in suitable function spaces and solve the ferrohydrostatic problem using an analytic version of Crandall-Rabinowitz local bifurcation theory. Criteria are derived for the bifurcations to be sub-, super- or transcritical with respect to a dimensionless physical parameter.

Lausanne, le 23 octobre, 2018

BB/BD/MC/JK/HMN

Les séminaires qui ont lieu à la Section de Mathématiques sont annoncés sur Internet

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