



Mathematics Department University of Fribourg

Wednesday, 3.6.2015

Time: 16:00
Physics building
Lecture room 2.52

Colloquium

Prof. Martin Hairer

University of Warwick

Weak universality of the KPZ equation

Abstract: *The KPZ equation is a popular model of one-dimensional interface propagation. From heuristic consideration, it is expected to be "universal" in the sense that any "weakly asymmetric" or "weakly noisy" microscopic model of interface propagation should converge to it if one sends the asymmetry (resp. noise) to zero and simultaneously looks at the interface at a suitable large scale. The only microscopic models for which this has been proven so far all exhibit very particular that allow to perform a microscopic equivalent to the Cole-Hopf transform. The main bottleneck for generalisations to larger classes of models was that until recently it was not even clear what it actually means to solve the equation, other than via the Cole-Hopf transform. In this talk, we will see that there exists a rather large class of continuous models of interface propagation for which convergence to KPZ can be proven rigorously. The main tool for both the proof of convergence and the identification of the limit is the recently developed theory of regularity structures, but with an interesting twist.*

Tea and coffee

Time: 15:30
Mathematics building
Coffee room

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Invitation by Christian Mazza