SEMINAIRE D'ANALYSE

➢ *VENDREDI 25 MAI 2018 à 14:15 - SALLE MA A1 12*

Dr. Bodgan-Vasile **MATIOC**
(Universität Regensburg - Germany)

donnera un séminaire sur le thème :

«*ON SOME NONLINEAR PARABOLIC PROBLEMS INVOLVING SINGULAR INTEGRALS*»

Abstract:

The Muskat problem is a classical model for the motion of two immiscible fluid layers in a porous medium.
The model was first proposed in 1934 to describe the intrusion of water into an oil reservoir and it is connected to the oil extraction process.
An important aspect of the mathematical analysis of the Muskat problem is the fact that the equations of motion can be formulated as an evolution problem for the free boundary, separating the fluids, only.
In this talk we discuss the Muksat problem in the setting where the layers have unbounded thicknesses/heights. In dependence of the viscosity constants of the fluids the Muskat problem can be formulated by using singular integrals defined by kernels depending nonlinearly on the the function parameterizing the free boundary between the fluids. We then establish the well-posedness of the mathematical models and discuss some qualitative aspects of the fluid motion.

Lausanne, le 22 mai, 2018
BB/rb

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Les séminaires qui ont lieu à la Section de Mathématiques sont annoncés sur Internet
http://memento.epfl.ch/maths/