

SEMINAIRE D'ANALYSE

➤ **VENDREDI 19 JUIN 2015 à 15h15 - salle MA A112**

Professeur **PAOLO MARCELLINI** (Université de Florence, It) donnera une conférence sur le thème:

« A variational approach to parabolic equations and systems via the calculus of variations »

We introduce the notion of "variational solutions", also named "parabolic minimizers", to a class of evolutionary problems possessing a variational structure.

The advantage of these variational solutions stems from the fact that they might exist even in situations where the associated nonlinear parabolic system makes no sense. We should compare with the stationary case, where it is possible to establish the existence of minimizers by the direct methods of the calculus of variations in fairly general situations, whereas additional stronger assumptions are needed to guarantee that the minimizers fulfill the Euler-Lagrange system.

Under reasonable assumptions, such as coercivity and convexity of the energy function, the variational solution exists and is unique. Under further natural growth conditions, the variational solution is also the unique weak solution to the associated Cauchy-Dirichlet problem.

This is a joint collaboration with V.Bögelein and F.Duzaar.

Lausanne, le 27 mai 2015
BD/BB/vl