

B. Buffoni – B. Dacorogna – J. Krieger - H.M Nguyễn - Section Mathématiques

SEMINAIRE D'ANALYSE

➤ **MERCREDI 16 JUILLET 2014 à 15h15 - salle MA A331**

*Professeur **Dung LE** (Université du Texas, San Antonio, USA) donnera une conférence sur le thème:*

« On classical solutions to strongly coupled elliptic and parabolic systems »

Abstract:

Strongly coupled or cross diffusion systems present new difficulties in the regularity theory of PDEs and need new approaches. In literature, it has been mostly assumed that the systems are regular elliptic and boundedness of solutions are known. The latter assumption is extremely difficult to check because maximum principles for systems are generally not available. We will depart from these assumptions and consider BMO weak solutions. Thus, the systems may be no longer regular elliptic and we will have to deal with uniform elliptic ones. In the first part of the talk I will discuss the existence of smooth solutions to a class of strongly coupled and uniform elliptic systems in the BMO setting. In the second part, I will discuss the regularity theory and global existence of solutions to a class of the corresponding parabolic systems. If time permits we will also discuss new blow up counterexamples.

Lausanne, le 25 juin 2014
HMN/cr

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