

Prof. Marco Picasso

***Institut de mathématiques des sciences computationnelles et
ingénierie MATHICSE***

SEMINAIRE D'ANALYSE NUMERIQUE

➤ ***MERCREDI 21 septembre 2011 à 16h15 à la salle ME B 331***

*Prof. Alexei Lozinski, Professeur à l'Université Paul Sabatier (Toulouse), donnera
une conférence intitulée:*

"Asymptotic Preserving schemes for strongly anisotropic elliptic problems"

Résumé :

We present accurate and robust numerical schemes to solve a highly anisotropic elliptic equation, the anisotropy direction being given by a variable vector field. These schemes are based on an asymptotic preserving reformulation of the original system allowing for an accurate resolution independently of the anisotropy strength and on a mesh, which is not necessarily adapted to this anisotropy direction. The drawback of this procedure is the larger system size, enlarged by adding auxiliary variables and Lagrange multipliers (5 times larger in the first version of our approach published in [1]). Fortunately, it is possible to introduce only one auxiliary variable, which results in a very efficient method [2]. Both numerical results and some ideas for a theoretical convergence analysis will be presented.

Lausanne, le 8 septembre 2011
Prof. Marco Picasso