B. Buffoni – B. Dacorogna – J. Krieger – M Nguyên – Section Mathématiques

SEMINAIRE D'ANALYSE

➢ *VENDREDI 5 DECEMBRE 2014 à 15h15 - salle MA A331*

➢

Professeur **Olivier Glass** (Université de Dauphine, Paris) donnera une conférence sur le thème:

« Limit behavior of a small body in an incompressible perfect fluid »

Abstract: We consider a solid in a perfect incompressible fluid in dimension two. The fluid is driven by the classical Euler equation, and the solid evolves under the influence of the pressure on its surface. We consider the limit of the system as the solid shrinks to a point. We obtain two different models in the limit. The first one is obtained when the mass of the solid and the circulation around it are fixed; in that case the system converges to a variant of Marchioro and Pulvirenti's vortex-wave system where the vortex, placed in the point occupied by the shrunk body, is accelerated by a lift force similar to the Kutta-Joukowski force. The second one is obtained when the density of the solid and the circulation around it are fixed; in that case, we recover in the limit the vortex-wave system itself. These results are obtained in collaboration with Christophe Lacave (Paris-Diderot), Alexandre Munnier (Nancy) and Franck Sueur (Bordeaux).

Lausanne, le 13 novembre 2014
BD/HMN/MM