SEMPARIS – Séminaires en région parisienne

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TBA

Mercredi 3 Juillet 2019, 10 :00
IHES, Amphithéâtre Léon Motchane(Cours de l'IHES)
Domaines : math

Titre : *Inviscid Limit and Prandtl System (4/4)*

Orateur : **Nader Masmoudi (Université de New York)**

Résumé : *One of the main open problems in the mathematical analysis of fluid flows is the understanding of the inviscid limit in the presence of boundaries. In the case of a fixed bounded domain, it is an open problem to know whether solutions to the Navier-Stokes system with no slip boundary condition (zero Dirichlet boundary condition) do converge to a solution to the Euler system when the viscosity goes to zero. The main problem here comes from the fact that we cannot impose a no slip boundary condition for the Euler system. To recover a zero Dirichlet condition, Prandtl proposed to introduce a boundary layer (a small neighborhood of the boundary) in which viscous effects are still present. It turns out that the system that governs the flow in this small neighborhood, namely the Prandtl system has many mathematical difficulties. The goal of this course is to discuss some of the recent development in the inviscid limit as well as the study of the Prandtl system. We will also discuss the singularity formation for both the stationary and non stationary Prandtl system.*