SEMPARIS – Séminaires en région parisienne

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TBA

Mercredi 5 Fevrier 2025, 10 :30
IHES, Amphithéâtre Léon Motchane(Cours de l'IHES)
Domaines : math

Titre : *Hard Sphere Dynamics in the Low Density Limit (3/4)*

Orateur : **Laure Saint-Raymond (IHES)**

Résumé : *At the microscopic level, a gas is a collection of interacting neutral particles. The very large number of degrees of freedom and the sensitivity of the system to very small perturbations mean that it is essentially impossible to predict its dynamics deterministically. At the end of the 19th century, Boltzmann proposed describing the behaviour of gas in an alternative way, using a statistical approach. A natural question is whether the assumption of statistical independence that underlies this model is compatible with microscopic dynamics and in what sense the Boltzmann equation is a good approximation. This course will provide some answers to this question, within the simplified framework of contact interactions. 1. The Boltzmann equation, the chaos hypothesis and the H theorem 2. Law of large numbers for the dynamics of hard spheres 3. Correlations, dynamic clusters 4. Fluctuations and large deviations for the dynamics of hard spheres*