Séminaire : Problèmes spectraux en physique mathématique

Les séminaires ont lieu à l'**Institut Henri Poincaré**, 11 rue Pierre et Marie Curie, 75005 Paris.

Programme du lundi 24 avril 2017, en **amphi Hermite** **(Rez-de-chaussée)**

— 11h15 - 12h15 : **Giambattista Giacomin** (Paris 7)
Singular behavior of the leading Lyapunov exponent of a product of 2×2 random matrices.

We consider a certain infinite product of random 2×2 matrices appearing in the solution of some 1 and 1+1 dimensional disordered models in statistical mechanics. B.Derrida and H.J.Hilhorst (J. Phys. **A 16**, 2641 (1983)) pointed out that this Lyapunov exponent has a singular behavior in a suitable parameter and they provide a sharp prediction about this singularity. Their analysis is based on a two-scale analysis of the integral equation for the invariant distribution of the Markov chain associated to the matrix product, and they obtained a probability measure that is expected to be close to the invariant one near the singularity. We introduce suitable norms and exploit contractivity properties to show that such a probability measure is indeed close to the invariant one, in a sense which implies the sharp control of the Lyapunov exponent.

— 14h - 15h : **Quentin Liard** (Paris 13)
Dérivation de problèmes à N corps par les mesures de Wigner.

Dans cet exposé, j'aborderai des problèmes d'évolution à N corps pour des systèmes de bosons confinés ou localement confinés. J'évoquerai en parallèle la stratégie basée sur la résolution de hiérarchies de type BBGKY ou Gross-Pitaevskii et celle, plus récente, basée sur la résolution de l'équation de Liouville.

— 15h15 - 16h15 : **Oliver Butterley** (ICTP Trieste)
Open sets of exponentially mixing Anosov flows.

If a flow is sufficiently close to a volume-preserving Anosov flow and the stable and unstable subspaces satisfy $\dim E_s = 1$ and $\dim Eu \geq 2$, then the flow mixes exponentially fast whenever the stable and unstable foliations are not jointly integrable (and similarly if the requirements on stable and unstable bundle are reversed). This implies the existence of non-empty open sets of exponentially mixing Anosov flows.
This is a joint work with Khadim War.

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