Séminaire : Problèmes spectraux en physique mathématique

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

Programme du 7 avril 2014, en **salle 314** (3e étage)

— 11h15 - 12h15 : **Benjamin Texier** (Jussieu)
Approximations of pseudo-differential flows

I will put forward a microlocal approach to stability of reference solutions in systems of partial differential equations. The idea is to look for unstable spectrum at the symbolic level, as opposed to unstable spectrum for the associated differential operators. I will give model results in this direction, based on an approximation lemma for pseudo-differential flows, and draw a comparison with Gårding's inequality.

— 14h - 15h : **Michał Wrochna** (Orsay)
Microlocal analysis of quantum fields on curved spacetime

In Quantum Field Theory on curved spacetime, a key problem is the existence of states whose two-point functions are distributions with a specified wave front set. I will show that this is equivalent to the existence of a parametrix (for the given hyperbolic differential equation), that has good properties with respect to the conserved charge. I will then present a construction of such parametrix for the (vectorial) Klein-Gordon and wave equation, based on pseudodifferential calculus rather than Fourier integral operators.
The talk is based on a joint work with Christian Gérard.

— 15h15 - 16h15 : **Sandrine Péché** (Paris 7)
Deformed ensembles of random matrices

We review more or less recent results on deformations of random matrices. We focus on additive deformations of random matrices, by considering the impact of adding a given matrix to a standard Wigner random matrix. The asymptotic behavior of the spectrum is then described in terms of the deformation. Applications to statistics, physical mathematics are also given.

Pour tout renseignement, contacter les organisateurs
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