OLLOQUE DES SCIENCES MATHÉMATIQUES DU QUÉBEC
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DATE :
Le vendredi 12 janvier 2018 / Friday, January 12, 2018

HEURE / TIME :
16 h / 4:00 p.m.

CONFERENCIER(S) / SPEAKER(S) :
Semyon Dyatlov (UC Berkeley / MIT)

TITRE / TITLE :
What is quantum chaos

LIEU / PLACE :
CRM, Université de Montréal, Pavillon André-Aisenstadt, salle 6254

RESUME / ABSTRACT :
Where do eigenfunctions of the Laplacian concentrate as eigenvalues go to infinity? Do they equidistribute or do they concentrate in an uneven way? It turns out that the answer depends on the nature of the geodesic flow. I will discuss various results in the case when the flow is chaotic: the Quantum Ergodicity theorem of Shnirelman, Colin de Verdière, and Zelditch, the Quantum Unique Ergodicity conjecture of Rudnick-Sarnak, the progress on it by Lindenstrauss and Soundararajan, and the entropy bounds of Anantharaman-Nonnenmacher. I will conclude with a recent lower bound on the mass of eigenfunctions obtained with Jin. It relies on a new tool called "fractal uncertainty principle" developed in the works with Bourgain and Zahl.

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Responsables :
   Olivier Collin (UQÀM)
   Henri Darmon (Université McGill)
   Dimitris Koukoulopoulos (Université de Montréal)
   Iosif Polterovich (Université de Montréal)
   David Stephens (Université McGill)
   Hugh Thomas (UQÀM)
   Yi Yang (Université McGill)
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