Séminaire de théorie des nombres

Le 20 avril 2015 à 14h (Jussieu)

The generalized circle problem, mean value formulas and Brownian motion

Exposé de Anders Södergren
(University of Copenhagen)

Résumé : The generalized circle problem asks for the number of lattice points of an n-dimensional lattice inside a large Euclidean ball centered at the origin. In this talk I will discuss the generalized circle problem for a random lattice of large dimension n. In particular, I will present a result that relates the error term in the generalized circle problem to one-dimensional Brownian motion. The key ingredient in the discussion will be a new mean value formula over the space of lattices generalizing a formula due to C. A. Rogers. This is joint work with Andreas Strömbergsson.