Geometry and spectrum of random hyperbolic surfaces

Laura Monk
IRMA Strasbourg

The main aim of this talk is to present geometric and spectral properties of typical hyperbolic surfaces. More precisely, I will:

- introduce a probabilistic model, first studied by Mirzakhani, which is a natural and convenient way to sample random hyperbolic surfaces

- describe the geometric properties of these random surfaces

- explain how one can deduce from this geometric information estimates on the number of eigenvalues of the Laplacian in an interval [a,b], using the Selberg trace formula.