Spectral gap for random Schottky surfaces

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For decades, the study of the spectrum of the Laplacian of Riemannian manifolds has been a very active topic of research at the crossroads of Geometry, Dynamics, Number Theory and Probability. The particularly rich and beautiful theory for hyperbolic surfaces (i.e. with constant curvature -1) holds a privileged spot in the area because it deals with objects that are explicit enough to allow us to get our hands-on, yet it still holds many mysteries. One of the broad goals of the area is to understand the behaviour of the Laplace eigenvalues of a "typical" hyperbolic surface. In this talk I will present a spectral gap result for random hyperbolic surfaces of infinite area without cusps (aka Schottky surfaces), obtained in collaboration with M. Magee and F. Naud. Our result can be interpreted as a probabilistic analog for Schottky surfaces of Selberg's celebrated 1/4-Conjecture.