JAYADEV ATHREYA, Yale University, Dept. of Mathematics, 10 Hillhouse Ave, New Haven, CT 06511
A lattice point problem in Teichmuller space

Let T_g denote the Teichmuller space of marked compact Riemann surfaces of genus g. Let Γ_g be the associated mapping class group. Let Q_g be the unit co-tangent bundle to T_g, that is, the space of (marked) unit area holomorphic quadratic differentials. Let $\pi\colon Q_g \to T_g$ be the natural projection, and let μ denote the natural Γ_g-invariant measure on Q_g. Then $m = \pi_*\mu$ is a measure on Teichmuller space. In joint work with Bufetov, Eskin, and Mirzakhani, we calculate the asymptotics of

- $|\Gamma_g x \cup B(y,R)|$, for $x, y \in T_g$, where $B(y,R)$ denotes the ball of radius R in the Teichmuller metric;
- $m\big(B(x,R)\big)$.