Speaker: Claire Burrin

Title: Windings of prime geodesics

Abstract: In his 2006 ICM address, Ghys noted that the winding of a closed geodesic around the cusp of the modular orbifold $PSL(2,\mathbb{Z})\backslash PSL(2,\mathbb{R})$ is computed in terms of the Dedekind symbol, a familiar object from the theory of modular forms. Sarnak then showed how one can take advantage of this connection (via Selberg's trace formula) to compute precise statistics of these winding numbers. With Flemming von Essen, we extend these results to closed geodesics on other cusped hyperbolic orbifolds. This builds on the theory of multiplier systems, Kronecker-type limit formulas, and Selberg's trace formula for automorphic forms of real weight.