

Mark Srednicki
University of California, USA

Quantum mechanics on the idle class group

Tate's global integral formula for the zeta function can be interpreted as an inner product of the ground state of a harmonic oscillator on the adles with an eigenstate of the Berry-Keating hamiltonian xp . The latter lives most naturally on the idle class group. In other systems, similar inner products can be shown to be related to spectral determinants; doing so in this case would prove the Riemann hypothesis. The key missing ingredient is a formulation of the harmonic oscillator on the idle class group.