SHAMIT KACHRU, Stanford University
Black holes, class numbers, and special cycles

We discuss a relationship between BPS black holes in string theory compactification on K3 x T2, and class numbers of quadratic imaginary number fields. This connection explains the fact that inequivalent "attractor black holes" in this string model are counted by coefficients of the q-series of a weight 3/2 mock modular form. These facts constitute a special case of a more general relationship between special cycles in string theory moduli spaces and automorphic forms which count them, arising from the theory of Kudla and Milson.