

ALGEBRA AND NUMBER THEORY
SEMINAR

K3 Surfaces, Mock Modular Forms and the Conway Group

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Abstract: In their famous Monstrous Moonshine paper of 1979, Conway Norton also described an association of modular functions to the automorphism group of the Leech lattice (a.k.a. Conways group). In analogy with the monstrous case, there is a distinguished vertex operator superalgebra that realizes these functions explicitly. More recently, it has come to light that this Conway moonshine module may be used to compute equivariant enumerative invariants of K3 surfaces. Conjecturally, all such invariants can be computed in this way. The construction attaches explicitly computable mock modular forms to automorphisms of K3 surfaces.

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