

Toward a toroidal modular compactification of moduli spaces of polarized K3 surfaces

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I am reporting on joint work in progress with Mark Gross, Paul Hacking and Sean Keel on the construction of canonical families of polarized K3 surfaces on certain toroidal compactifications of F_g , the moduli space of K3 surfaces of genus g . The construction is based on mirror symmetry and involves walls related to Gromov-Witten theory on the mirror family of F_g , a certain one-dimensional family of lattice polarized K3 surfaces studied by Nikulin, Aspinwall, Voisin and Dolgachev.