

John Duncan
Case Western Reserve University - USA

Umbral Moonshine Modules

Umbral moonshine attaches mock modular forms, including many of Ramanujans original mock theta functions, to automorphisms of the Niemeier lattices. It is now known that this association can be recovered from specific, graded modules for the Niemeier lattice automorphism groups. It is expected that an elucidation of the algebraic structures underlying these modules will have interesting applications in geometry and physics. We will describe the umbral module existence proof, and discuss recent progress in a program to realize these objects explicitly.