



GEOMETRY, TOPOLOGY, AND PHYSICS SEMINAR

Modular Equations and Special Function Transformations

Rob Maier
University of Arizona

Friday, February 8, 2008, 4:00 p.m.
Room 6635 South Hall

Many identities in classical function theory involve algebraic changes of the independent variable. This includes transformations of elliptic integrals, of combinatorial generating functions, and in general, transformations of the solutions of Fuchsian equations, such as hypergeometric and Heun equations. We shall explain how many such identities come ‘from geometry’, since they have a modular origin. They are induced by covering relations between (rational) families of elliptic curves, and in fact, are relations between the solutions of the associated Picard-Fuchs equations.