Temple University Mathematics Colloquium

Ron Donagi

University of Pennsylvania

will speak on

Moduli of super Riemann surfaces

ABSTRACT: We study various aspects of supergeometry, including obstruction, Atiyah, and super-Atiyah classes. This is applied to the geometry of the moduli space of super Riemann surfaces. We prove that for genus greater than or equal to 5, this moduli space is not projected (and in particular is not split): it cannot be holomorphically projected to its underlying reduced manifold. Physically, this means that certain approaches to superstring perturbation theory that are very powerful in low orders have no close analog in higher orders. Mathematically, it means that the moduli space of super Riemann surfaces cannot be constructed in an elementary way starting with the moduli space of ordinary Riemann surfaces. It has a life of its own. The talk is based on joint work with E. Witten.

Monday, April 7, 2014
Lecture at 4:00 pm
Coffee, tea, and refreshments from 3:40 pm
Room 617, Wachman Hall
Department of Mathematics