

Meeting: 1005, Newark, Delaware, SS 2A, Special Session on Singular Analysis and Spectral Theory of Partial Differential Equations

1005-58-127 **Paul A Loya*** (paul@math.binghamton.edu), SUNY Binghamton, Department of mathematics, Vestal Parkway East, Binghamton, NY 13902, and **Jinsung Park**. *Eta invariants for first order regular singular operators.*

The eta invariant originally appeared as the boundary correction term of the index formula of Atiyah, Patodi, and Singer, but since this seminal paper, the study of the eta invariant has taken off with a life of its own. In this talk, I will discuss joint work with Jinsung Park on eta invariants of first order regular singular operators on manifolds with boundary which generalize the Gauss-Bonnet and signature operators on conic manifolds. Such operators admit many self-adjoint extensions parametrized by Lagrangian subspaces of an associated finite-dimensional symplectic vector space. I will talk about the dependence of the eta invariant upon the choice of Lagrangian subspace and relate the eta invariant to a corresponding eta invariant of a smooth (nondegenerate) operator with global pseudodifferential boundary conditions on a compact manifold with boundary obtained by removing a neighborhood of the singularity. (Received February 03, 2005)