

Meeting: 1003, Atlanta, Georgia, SS 16A, AMS Special Session on Inverse Spectral Geometry, I

1003-53-1209 **Sarah J Greenwald*** (greenwaldsj@appstate.edu). *The Spectrum of Orbifolds*. Preliminary report.

While some results for Riemannian manifolds generalize to the orbifold setting, most global results in Riemannian geometry do not generalize to orbifolds easily: many of them no longer hold, while others take on a different form. In 1976, H. Donnelly studied the heat expansion of quotients of Riemannian manifolds by properly discontinuous group actions, and he computed the first few heat invariants. After a brief introduction to geometric orbifolds, we will discuss joint work with C. Gordon, D. Webb, and S. Zhu on the heat expansion and first few heat invariants of arbitrary orbifolds, including those which are not global quotients. Using these invariants, we have shown that the topological types of all orientable two-dimensional orbifolds of positive Euler characteristic are spectrally determined. (Received October 04, 2004)