KATIE GITTINS, Durham University
Comparing Hodge spectra of manifolds and orbifolds: Part 2.

We consider the Hodge Laplacian acting on differential forms on closed Riemannian orbifolds. It is interesting to investigate whether it is possible to glean information about the singularities from the spectral data. We focus on whether orbifolds with singularities are spectrally distinguished from smooth manifolds. We apply the heat invariants for differential forms to obtain several positive results in this direction. For example, we obtain that the spectra of the Laplacian for functions and 1-forms together can detect the presence of singularities for orbifolds of dimension at most 3. Time-permitting, we may also discuss some negative results by presenting counterexamples.

This is based on joint work with Carolyn Gordon, Magda Khalile, Ingrid Membrillo Solis, Mary Sandoval and Elizabeth Stanhope.