

Eric Todd Quinto, Tufts University, Medford, MA

**Support Theorems for the Spherical Radon Transform on Manifolds.**

Let  $M$  be a real-analytic manifold and let  $S$  be a real-analytic hypersurface. We prove local support theorems for the spherical Radon transform that integrates over spheres centered at points on  $S$ . Our theorems are valid for distributions supported on one side of "tangent surfaces" to  $S$ . Very local as well as global theorems will be presented. The proofs involve microlocal analysis of the sphere transform and a microlocal Holmgren theorem of Kawai, Kashiwara, and Hörmander. If time, applications to sonar and stationary sets for the wave equation will be outlined.