

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

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Abstract. Let  $M$  be a real-analytic manifold and let  $S \subset M$  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 a broad class of distributions with initial support restrictions depending on  $S$  and the injectivity radius of  $M$ . The proofs involve the microlocal analysis of the sphere transform and a microlocal Holmgren theorem of Kawai, Kashiwara, and Hörmander.