

## Multifrequency inverse source problems for Helmholtz equations

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In this talk, we investigate an interior Helmholtz inverse source problem with multiple frequencies. By implementing sharp uniqueness of the continuation results and exact observability bounds for the wave equation, a (nearly Lipschitz) increasing stability estimate is explicitly obtained for Cauchy measurements in a non-empty wave-number interval. With a specific geometric domain, an iterative/recursive reconstruction algorithm is proposed aiming at recovering unknown sources by the multifrequency boundary measurement. Both convergence and error estimates are derived to guarantee its reliability. Numerical examples verify the efficiency of our proposed algorithm.

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