

Meeting on Computational and Analytic Problems in Spectral Theory

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Abstract of Talk

INVERSE PROBLEMS FOR THE CONNECTION LAPLACIAN

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We reconstruct a Riemannian manifold and a Hermitian vector bundle with compatible connection from the hyperbolic Dirichlet-to-Neumann operator associated to the wave equation for the connection Laplacian. The boundary data is local and the reconstruction is up to the natural gauge transformations of the problem. The gauge transformations are present already in the scalar case where the connection corresponds to a magnetic vector potential. The hyperbolic inverse problem is closely related to the corresponding inverse boundary spectral problem. The talk is based on joint work Yaroslav Kurylev (University College London) and Gabriel P. Paternain (University of Cambridge).