Title: A tomographic perspective on Fourier extension operators

Abstract: We explore ways in which Fourier extension operators may be understood via their L^2 norms on affine subspaces. We present a number of identities, estimates and conjectures for such sections, along with various connections to the wider restriction theory. In particular, we use the inversion formula for the X-ray transform to establish certain (Sobolev) variants of the Mizohata--Takeuchi and Stein conjectures in the plane. From a dispersive PDE standpoint this perspective may be traced back at least as far as work of Planchon and Vega from 2009; see also work of Ozawa and Tsutsumi from 1998. This is joint with Shohei Nakamura (Osaka), and most recently Shohei Nakamura and Shobu Shiraki (Nagoya).