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## Vandermonde-based tomography reconstruction in Fourier space

### Abstract

The Vandermonde structure of tomography was previously presented for angles of the form  $(p,1)$ , allowing the reconstruction from projections with Vandermonde solving algorithms like Björck's, LU decomposition similar to Turner's or even Lagrange polynomials. In this presentation, we show how to extend these results in Fourier space for arbitrary angles where each projection of angle  $(p,q)$  is first divided into  $p$  projections. We show how this transformation also exhibits a Vandermonde structure. The overall reconstruction then takes place separately for each frequency. The link with Katz' criterion on uniqueness of reconstruction will be discussed.