1068-92-82 **Yangbo Ye\*** (`yey@iowa.uiowa.edu`), Department of Mathematics, The University of Iowa, Iowa City, IA 52242-1419. *Gel'fand-Graev's reconstruction formula in a 3D real space.*

Gel'fand and Graev performed classic work on inversion formulas of integral transforms in different spaces and revealed a fundamental relationship between projection data and the Hilbert transform of an image to be reconstructed. This relationship was re-discovered in the computed tomography field, and applied to truncated reconstruction, backprojection filtration (BPF), interior tomography, and limited-angle tomography. In this talk we will explain Gel'fand-Graev's inversion formula for the 1D x-ray transform in a 3D space and show that the BPF algorithm is a special case of Gel'fand-Graev's formula. (Received January 13, 2011)