1145-42-1258 **Congzhi Xia*** (xia@clarkson.edu), 8 Clarkson Ave., CU Box 5815, Potsdam, NY 13699.

Reconstruction of piece-wise smooth functions from non-uniform Fourier data. Preliminary report.

Non-uniform Fourier data are routinely collected in applications such as magnetic resonance imaging, synthetic aperture radar, and synthetic imaging in radio astronomy. However, reconstructing piece-wise smooth functions from Fourier measurements suffers from the Gibbs phenomenon (O(1) oscillations in the neighborhood of the edges). The popular filter/mollifier method could alleviate the Gibbs phenomenon and improve the accuracy away from the edges. We will introduce in this talk a hybrid filter-extrapolation method to further improve the accuracy around the edges. (Received September 20, 2018)