1112-65-670 **Siwei Duo** and **Yanzhi Zhang*** (zhangyanz@mst.edu), 400 W 12th Street, Department of Mathematics and Statistics, Missouri University of Science and Technology, Rolla, MO 65401.

Numerical approximation to the Reisz fractional Laplacian.

Recently, one debate in the literature is whether the fractional Schroedinger equation in an infinite potential well has the same eigenfunctions as those of its standard (non-fractional) counterpart. Due to the nonlocality of the fractional Laplacian, it is challenging to find the eigenvalues and eigenfunctions of the fractional Schroedinger equation analytically. In this talk, we present a novel numerical method for discretizing the Riesz fractional Laplacian and numerically study the eigenfuctions of the fractional Schroedinger equation. (Received August 11, 2015)