1145-65-2410 **Shari Moskow*** (slm84@drexel.edu), **Liliana Borcea**, **Vladimir Druskin**, **Alex Mamonov** and **M. Zaslavsky**. *Reduced Order Models For Spectral Domain Inversion: Galerkin Equivalence And Generation Of Internal Data.* Preliminary report.

We generate reduced order Galerkin models for inversion of problems in Schrodinger form given data in the spectral domain for one and two dimensional problems. We show that in one dimension, after tridiagonalization, the Galerkin system is precisely the same as the three point staggered nite difference system on the corresponding spectrally matched grid. The orthogonalized basis functions depend only very weakly on the medium, and thus the spectral data yields highly accurate internal solutions, which suggests some natural inversion procedures. (Received September 25, 2018)