1114-34-244 **Kristen Shavlik*** (kshavlik@uwyo.edu). *Numerical Methods for Solving the Zakharov-Shabat Eigenvalue Problem.* Preliminary report.

The Zakharov-Shabat (ZS) eigenvalue problem is one half of the Lax pair for the focusing nonlinear Schrodinger (NLS) equation. In this talk, we present two numerical approaches, the complex shooting method of Bronski and the Evans function root-tracking method of Humpherys and Lytle, for the problem of locating eigenvalues of the ZS problem with real, bell-shaped potentials. In particular, our experiments are designed to explore how perturbations in the potential affect the solution of the NLS equation in the semiclassical (zero-dispersion) limit. (Received August 28, 2015)