1137-35-62 **Ariel Barton*** (aeb019@uark.edu), **Steve Hofmann** and **Svitlana Mayboroda**. *The Neumann problem for symmetric higher order elliptic differential equations.*

Second order equations of the form $\nabla \cdot A\nabla u = 0$, with A a uniformly elliptic matrix, have many applications and have been studied extensively. A well known foundational result of the theory is that, if the coefficients A are real-valued, symmetric, and constant along the vertical coordinate (and merely bounded measurable in the horizontal coordinates), then the Dirichlet problem with boundary data in L^2 or $\dot{W}^2_1$ and the Neumann problem with boundary data in L^2 are well-posed in the upper half-space.

The theory of higher order elliptic equations of the form $\nabla^m \cdot A\nabla^m u = 0$ is far less well understood. In this talk we will generalize well posedness of the L^2 Neumann problem in the half-space to the case of higher-order equations with real symmetric vertically constant coefficients. (Received January 23, 2018)