

1159-65-28

Minah Oh* (ohmx@jmu.edu). *Multigrid in $H(\text{div})$ on Axisymmetric Domains.*

In this talk, we will present a multigrid algorithm that can be applied to weighted $H(\text{div})$ problems on a two-dimensional domain. These problems arise after performing a dimension reduction to a three-dimensional axisymmetric $H(\text{div})$ problem with general data. We will use recently developed Fourier finite element spaces that can be applied to $H(\text{div})$ problems on axisymmetric domains. We present mathematical results that show that if the axisymmetric domain is convex, then the multigrid V-cycle will converge uniformly with respect to the mesh size. We will also show numerical results consistent with the mathematical theory. (Received July 06, 2020)