

1105-65-267

Susanne C. Brenner, Christopher B. Davis* (cbdavis@tntech.edu) and **Li-yeng Sung**. *An enriched partition of unity method for a class of variational inequalities.*

In this talk, we consider an enriched partition of unity method of some elliptic fourth order variational inequalities. As examples we will consider the displacement obstacle problem for simply supported Kirchhoff plates and an elliptic distributed optimal control problem with pointwise state constraints. With the appropriate choice of enrichment functions, we show that this method is able to obtain the optimal rate of convergence in the energy norm. This talk will consist of details of the method, convergence analysis, and numerical examples. (Received September 22, 2014)