

1136-65-350

**Susanne Brenner, Joscha Gedicke, Li-yeng Sung and Yi Zhang\***, y\_zhang7@uncg.edu. *An a posteriori analysis of  $C^0$  interior penalty methods for a fourth order variational inequality.*

We consider the displacement obstacle problem of clamped Kirchhoff plates which is formulated as a fourth order variational inequality, and develop an a posteriori analysis of  $C^0$  interior penalty methods. We discuss reliability and efficiency estimates for the residual based error estimator and introduce an adaptive algorithm. We will present numerical results to gauge the performance of the proposed methods. (Received January 19, 2018)