

1154-VN-1166 **Jeb Collins*** (jbcoll12@gmail.com) and **Jehanzeb Chaudhry**. *A Posteriori Error Estimation for the Spectral Deferred Correction Method.*

The spectral deferred correction method is a relatively new method for solving systems of ordinary differential equations. This method utilizes basic finite difference methods and iterates on them to obtain higher accuracy than the original method can provide. This talk will discuss methods to estimate the error in this method a posteriori using adjoint-based methods. This necessitates finding a nodally equivalent finite element method, which essentially fills in the holes between the nodes of the finite difference approximation. A standard adjoint-based error representation formula is then used to find the error in a particular quantity of interest. (Received September 13, 2019)