

Meeting: 1003, Atlanta, Georgia, SIAMMINI 2, SIAM Minisymposium on Discontinuous Galerkin Methods: Theory and Applications

1003-65-1210 **Ohannes Karakashian*** (ohannes@math.utk.edu), Ohannes Karakashian, Department of Mathematics, The University of Tennessee, Knoxville, TN 37996-1300. *A posteriori error estimates and adaptive methods for a discontinuous Galerkin method for a second order elliptic problem.*

We present some a posteriori error estimates for a discontinuous Galerkin method for a second-order elliptic problem. These include both residual type estimators as well as two that require the solution of local problems. In a 1996 paper, W. Dörfler described a converging adaptive algorithm for Poisson's equation. We show that a similar approach also leads to a convergent algorithm for the DG method. We present the results of numerical experiments. (Received October 04, 2004)