1046-65-732 **Bo Dong*** (Bo_Dong@brown.edu), 182 George St, Box F, Providence, RI 02912, and **Chi-Wang Shu** (Chi-Wang_Shu@brown.edu), 182 George St, Box F, Providence, RI 02912. *Analysis of a local discontinuous Galerkin method for fourth-order time-dependent problems.*

We analyze a local discontinuous Galerkin (LDG) method for fourth-order time-dependent problems in one-dimensional and multidimensional spaces. Optimal convergence rates are obtained in one dimension and in two dimensions for Cartesian grids, and the results are extended to higher even order equations. For triangular meshes in multidimensional spaces, we prove optimal convergence results by using error estimates of the corresponding biharmonic problems, and the technique is extended to the linearized Cahn-Hilliard type equations. Numerical experiments are displayed to verify the theoretical results. (Received September 10, 2008)