1145-35-2943   **Montgomery Taylor*** (`mtaylo35@vols.utk.edu`), 1515 Claiborne Place, Knoxville, TN 37917.
The Diffusion Phenomenon with Time-Dependent Dirichlet Forms.

We discuss a method for studying the long-time behavior of solutions to damped wave equations, where the operators in the equations are time-dependent and correspond to time-dependent Dirichlet forms. We show that solutions exhibit the diffusion phenomenon, connecting their asymptotic behaviors with the asymptotic behaviors of solutions to corresponding parabolic equations. Decay estimates for solutions to damped wave equations are given, and decay estimates for components of their energies are also discussed. (Received September 25, 2018)