1086-60-1648 **Nathaniel Eldredge*** (neldredge@math.cornell.edu) and **Laurent Saloff-Coste** (lsc@math.cornell.edu). *Widder's theorem for symmetric local Dirichlet forms.*

Classically, Widder's theorem says that any nonnegative solution $u(t,x)$ of the heat equation $(\partial_t - \frac{1}{2}\Delta)u = 0$ on $(0,T)\times\mathbb{R}^d$ is uniquely determined by its initial values at time $t=0$; in particular, no growth conditions on u need be assumed. We present an extension of this theorem in which $\mathbb{R}^d$ is replaced by a metric measure space equipped with a symmetric, strictly local, regular Dirichlet form $(\mathcal{E},\mathbb{D})$ satisfying certain assumptions. Examples include Riemannian and sub-Riemannian manifolds as well as various fractals. A key ingredient is a parabolic Harnack inequality for local weak solutions of the heat equation defined by $(\mathcal{E},\mathbb{D})$. (Received September 23, 2012)