1077-60-2751　　　　　**Lee R Gibson** (`MathDoctorG@gmail.com`) and **Melanie A Pivarski***
(`mpivarski@roosevelt.edu`). *The rate of decay of the Wiener sausage in a local Dirichlet space.* Preliminary report.

Given a heat kernel diffusion which admits a Gaussian type estimate with parameter b on a local Dirichlet space, we will consider the log asymptotic behavior of the negative exponential moments of the Wiener sausage. We show that the log asymptotic behavior up to time $t^b V(x;t)$ is $V(x;t)$, where $V(x;t)$ represents the mass of the ball of radius t about a point x. This result provides the first such asymptotics for several contexts, including diffusions on complete Riemannian manifolds with non-negative Ricci curvature. (Received September 22, 2011)

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