1085-58-169 **Don Colladay** (colladay@ncf.edu), Division of Natural Science, 5800 Bay Shore Road, Sarasorta, FL 34243, and **Patrick McDonald*** (mcdonald@ncf.edu), Division of Natural Science, 5800 Bay Shore Road, Sarasota, FL 34243. *Heat content, exit time moments and metric graphs.*

For smoothly bounded domains in a Riemannian manifold there are deep connections between the heat content of the domain, the Dirichlet spectrum of the domain and the average expected exit time moments for Brownian motion on the domain. For example, it is known that the average expected exit time moments for Brownian motion determine the heat content of the domain, and, for generic domains, heat content determines Dirichlet spectrum. We establish analogous results in the context of metric graphs. In addition, we discuss well known isospectral families of compact metric graphs which we show are distinguished by heat content. (Received September 09, 2012)