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**Renee H Bell\*** (rbel1916@berkeley.edu), **Ching Wei Ho** and **Robert S Strichartz**. *Energy Measures of Harmonic Functions on the Sierpinski Gasket*.

For a function  $u$  on the Sierpinski gasket, whenever its standard Laplacian  $\Delta u$  exists as a function,  $\Delta(u^2)$  does not. The energy Laplacian defined through energy measures behaves better in this respect. We characterize the positive energy measures through studying the bounds of Radon-Nikodym derivatives with respect to the Kusuoka measure. We prove a limited continuity of the derivative on the graph  $V_*$  and express the average value of the derivative on a whole cell as a weighted average of the values on the boundary vertices. We also prove some characterizations and properties of the weights. (Received September 24, 2012)