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**Jessie L DeGrado\*** (jld69@cornell.edu), Department of Mathematics, Cornell University, Malott Hall, Ithaca, NY 14853-4201, and **Luke G Rogers** and **Robert S Strichartz**. *Harmonic Gradients of Eigenfunction on the Sierpinski Gasket*. Preliminary report.

A paper by Teplyaev [Gradients on Fractals, J. Funct. Anal. 174, 128-154] establishes the existence of a harmonic gradient for any function on the Sierpiński Gasket (SG) which has Hölder continuous Laplacian. We focus on calculating gradients of specific eigenfunctions on SG. Building on the work of Teplyaev, we obtain explicit formulae for the gradient of eigenfunctions at junction points. We also present numerical results which give rise to some interesting questions and conjectures. (Received September 05, 2006)