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(ruanhj@math.cornell.edu), Department of Mathematics, Cornell University, Ithaca, NY 14853,  
and **Robert S. Strichartz**. *The resolvent kernel for pcf self-similar fractals.*

For the Laplacian  $\Delta$  defined on a p.c.f. self-similar fractal, we give an explicit formula for the resolvent kernel of the Laplacian with Dirichlet boundary conditions. That is, we construct a symmetric function  $G^{(\lambda)}$  which solves  $(\lambda\mathbb{I} - \Delta)^{-1}f(x) = \int G^{(\lambda)}(x, y)f(y)d\mu(y)$ . The method is similar to Kigami's construction of the Green kernel in *Analysis on fractals*, and is expressed as a sum of scaled and "translated" copies of a certain function  $\psi^{(\lambda)}$  which may be considered as a fundamental solution of the resolvent equation. Examples of the explicit resolvent kernel formula are given for the unit interval, standard Sierpinski gasket, and the level-3 Sierpinski gasket  $SG_3$ . (Received August 13, 2008)