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Luke G Rogers* (luke.rogers@uconn.edu). *Magnetic operators on resistance spaces.*

We may model a quantum particle on a fractal substrate in a magnetic field by a magnetic operator based on a fractal Laplacian. Sufficient conditions for the existence of a self-adjoint magnetic operator in the case that the substrate admits a resistance form were found by Michael Hinz and the author. Spectral properties in the special case of the Sierpinski Gasket with a locally exact magnetic field will also be discussed. The latter results are from a collaboration with Jessica Hyde, Jesse Muller, Daniel Kelleher and Luis Seda. (Received January 31, 2016)