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Counting spanning trees on fractal graphs.

Presented is a way to calculate the number of spanning trees on graph approximations to self-similar symmetric finitely ramified fractals, such as the Sierpiński gasket. Kirchoff's Matrix-Tree Theorem shows that the number of spanning trees, on a finite graph, is equal to the product of the non-zero eigenvalues of the graph Laplacian. Using the method of spectral decimation, for this class of fractals, provides a way to find these eigenvalues and taking their product, giving on the number of spanning trees. Examples of this method will include the d -dimensional Sierpiński gasket and the Hexagasket. (Received August 10, 2010)