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52242-1419. *Fractals as Boundaries*.

I will discuss a couple of recent approaches to understanding certain self-similar fractals as "boundaries". Denker and Sato constructed a Markov process for which the Sierpinski gasket is (homeomorphic to) the Martin boundary. Kaimanovich outlined a program for understanding the Sierpinski gasket as a Gromov boundary, by constructing an associated hyperbolic graph. More recently, Lau and Wang have extended Kaimanovich's construction to self-similar sets satisfying the open set condition, and Lau, Ju, and Wang have also extended Denker & Sato's work to a certain class of pcf self-similar fractals. Also, Kigami's recent preprint develops the theory of resistance analysis on trees, with the aim of providing a new approach to the theory of analysis on fractals. The idea is to begin with the Laplacian & energy form on the tree, then use potential theory to take the trace of these objects to the boundary (a totally disconnected fractal set). I will give an overview of these results and, if time permits, describe some preliminary results of the authors on this topic. (Received February 16, 2010)