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Robert Ravier* (robert.ravier@duke.edu) and **Robert Strichartz**
(str@math.cornell.edu). *Sampling with average values on the Sierpinski Gasket.*

In the case of some fractals, sampling with average values on cells is more natural than sampling on points. We investigate this method of sampling on SG and SG_3 . In the former, we show that the cell graph approximations have the spectral decimation property and prove an analog of the Shannon sampling theorem. We also investigate the numerical properties of these sampling functions and make conjectures which allow us to look at sampling on infinite blowups of SG . In the case of SG_3 , we show that the cell graphs have the spectral decimation property, but show that it is not useful for proving an analogous sampling theorem. (Received January 24, 2016)