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Joe P. Chen and **Baris Evren Ugurcan*** (beu4@cornell.edu), Department of Mathematics, Cornell University, Ithaca, NY 14853. *Entropic repulsion of Gaussian free field on high-dimensional Sierpinski carpet graphs.*

Consider the free field on a fractal graph based on a high-dimensional Sierpinski carpet (*e.g.* Menger sponge), that is, a centered Gaussian field whose covariance is the Green's function for simple random walk on the graph. Moreover assume that a "hard wall" is imposed at height zero so that the field stays positive everywhere. We prove the leading-order asymptotics for the local sample mean of the free field above the hard wall on any transient Sierpinski carpet graph, thereby extending a result of Bolthausen, Deuschel, and Zeitouni for the free field on \mathbb{Z}^d , $d \geq 3$, to the fractal setting. (Received August 19, 2013)