

1148-30-317 **Jasun Gong*** (jgong7@fordham.edu), 441 E. Fordham Road, John Mulcahy Hall, Bronx, NY
10458. *Generalized Differentiability on Fractal Metric Spaces.*

A theorem of Mackay, Tyson, and Wildrick asserts that certain non-self-similar analogues of the Sierpiński carpet support Poincaré inequalities, when treated as metric measure spaces in their own right. As further proved by Cheeger and others, such a property on metric measure spaces is sufficient for Rademacher-type theorems to hold true on them, as well as for certain connectivity properties (in terms of rectifiable curves, or even curve fragments).

Motivated by these and other results in the analysis on metric spaces, we will discuss similarly iterative constructions, both Euclidean and not. We also address to what extent generalized differentiability properties, such as supporting Poincaré inequalities or even Alberti representations, hold true on them.

This talk is based on joint works with E. Durand Cartagena and J. Jaramillo, as well as with S. Eriksson-Bique. (Received February 05, 2019)