Winter Colloquium Series

Quantifying Fractality:

An Introduction to the Distance Zeta Function

Xander Henderson
UC Riverside

Abstract: While the term fractal is not well defined in mathematics, we generally understand the term to refer to sets which possess "roughness" or "complexity" at all scales. The complexity of a set can be detected and quantified by studying certain zeta functions associated to the set. In this talk, we will introduce the distance zeta function associated to a bounded subset of a metric space and discuss how it detects complexity and recovers other interesting geometric properties of a set, such as the Minkowski dimension. We will provide examples from Euclidean space and, if time permits, the *p*-adic numbers.

Keywords: Fractal geometry, analysis, number theory

Wednesday, Mar 7th, 1:05 - 1:50pm in 3-1623