

1050-35-2

Umberto Mosco*, Worcester Polytechnic Institute. *Fractal spectra between Scylla and Charybdis.*

In our talk we shall approach fractals from a very limited . although basic – point of view: as objects of physical nature that exhibit peculiar static and dynamical features. Intrinsically, fractals are manifolds of a new kind, which display unusual spectral properties. We will describe some implication of this fundamental feature and make a comparison with simple sub-Riemannian models. Fractals occur also as “large” boundaries of “small” Euclidean domains. This is a setting with unusual volume vs surface relation. We will describe simple examples of this kind and some related boundary value problems. (Received May 15, 2008)