

GEOMETRIC PARAMETERS FOR DIFFERENT CLASSES OF FRACTALS

MARTINA ZÄHLE

In this talk we will give a survey on results for the Minkowski content and fractal versions of Lipschitz-Killing curvatures obtained over the last fifteen years. In the classical differential geometric case the corresponding notions form a complete system of certain geometric invariants. Fractal extensions concern self-similar sets and domains with piecewise self-similar boundaries as well as stochastic models. Self-similar sets and random recursive constructions were first considered in the literature. It turned out only recently that homogeneous random fractals and the more general V -variable random fractals show a different stochastic behavior. However, the formulas for the mean values obtained by approximation with parallel sets in all cases are structurally the same as in the deterministic case. For random recursive constructions this remains valid in the pathwise sense.

INSTITUTE OF MATHEMATICS, FRIEDRICH SCHILLER UNIVERSITY JENA, GERMANY