

Properties of harmonic functions on self-similar sets

Brigitte E. Breckner

Faculty of Mathematics and Computer Science, Babeş-Bolyai University Cluj-Napoca

`brigitte@math.ubbcluj.ro`

In [3], J. Kigami developed an appropriate framework that allows the study of PDEs on post critically finite self-similar sets (i.e., on the so-called finitely ramified fractals from physics). In this framework, an important role is played by the harmonic functions and by the Sobolev-type spaces on self-similar sets. The talk, based on [1] and [2], emphasizes some nice properties of both harmonic functions and Sobolev-type spaces on the Sierpinski fractal, which is a typical example for a post critically finite self-similar set.

References

- [1] Breckner, B.E., *A short note on harmonic functions and zero divisors on the Sierpinski fractal*, Arch. Math. **106**, 183–188 (2016).
- [2] Breckner, B.E. and Chill, R., *The Laplace operator on the Sierpinski gasket with Robin boundary conditions*, Nonlinear Anal. Real World Appl. **38**, 245–260 (2017).
- [3] Kigami, J., *Analysis on Fractals*, Cambridge University Press, Cambridge, UK (2001).