DENGLIN ZHOU, University of Waterloo, 200 Univ. Ave. W., Waterloo, ON, N2L 3G1
Gaps in the ratios of the spectrum of Laplacians on fractals

In contrast to the classical situation, it is known that many Laplacian operators on fractals have gaps in their spectra. This surprising fact means there can be no limit in the Weyl counting formula and it is a key ingredient in proving that the convergence of Fourier series on fractals can be better than in the classical setting. Recently, it was observed that the Laplacian on the Sierpinski gasket has the stronger property that there exist intervals which contain no ratios of eigenvalues. In this talk, we give general criteria for this phenomenon and show that Laplacians on many interesting classes of fractals satisfy our criteria. This is a joint work with Kathryn Hare.