



# Spectral Asymptotics of Laplacians Associated with One-dimensional Iterated Function Systems with Overlaps

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*Abstract.* We set up a framework for computing the spectral dimension of a class of one-dimensional self-similar measures that are defined by iterated function systems with overlaps and satisfy a family of second-order self-similar identities. As applications of our result we obtain the spectral dimension of important measures such as the infinite Bernoulli convolution associated with the golden ratio and convolutions of Cantor-type measures. The main novelty of our result is that the iterated function systems we consider are not post-critically finite and do not satisfy the well-known open set condition.

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