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Average growth of the spectral function

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Abstract

The talk will discuss average growth of the spectral function of the Laplacian on a Riemannian manifold. Two types of averaging are considered: with respect to the spectral parameter and with respect to a point on a manifold. Our main results can be summarized in the following vague statement: typically, the spectral function behaves outside the diagonal as $\lambda^{(n-1)/2}$ rather than $\lambda^{(n-1)}$ as $\lambda \rightarrow \infty$. Some examples and open problems regarding almost periodic properties of the spectral function will also be discussed.

This is a joint work with H. Lapointe and I. Polterovich.