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Upper and lower bounds for eigenvalue gaps for Schrödinger operators and quantum graphs

The fundamental spectral gap is a well-studied object in spectral geometry and quantum theory. I will report on some recent bounds on this quantity for Schrödinger operators on intervals and metric graphs (networks), showing how the size of the gap is affected on the one hand by assumptions on the potential energy such as convexity and on the other by the topological structure of the graph. Differences from the situation with domains will be noted. This work is joint in part with Borthwick and Zhu, and in part with with Ahrami, El Allali, and Kennedy.