

## **Multifractal eigenfunctions in a singular quantum billiard**

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Spectral statistics and questions relating to quantum ergodicity in star graphs are closely related to those of Šeba billiards (rectangular billiards with a singular point scatterer) and other intermediate systems. In intermediate systems, it has been suggested in the Physics literature that quantum eigenfunctions should exhibit multifractal properties. I shall discuss the proof that this is the case for Šeba billiards. The work I shall report on was done jointly with Henrik Ueberschaer.