

Sharp Weyl Laws in 3d with rough potentials

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We consider the Laplace-Beltrami operator on a three-dimensional Riemannian manifold perturbed by a rough potential from the Kato class and study whether various forms of Weyl's law remain valid under this perturbation. In particular, we show that the pointwise Weyl law with sharp remainder estimate is valid under an assumption that is slightly stronger than Kato class and that, on the other hand, this sharp remainder estimate can be violated for Kato class potentials. For the proof we extend the method of Avakumović to the case of Schrödinger operators with singular potentials.

The talk is based on joint work with J. Sabin.