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Absorption by deformed black holes

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Alternative theories of gravity and the parameterized deviation approach allow black hole solutions to have additional parameters beyond mass, charge and angular momentum. Matter fields could be, in principle, affected by the additional parameters of these solutions. We compute the absorption cross section of massless spin-0 waves by static Konoplya-Zhidenko black holes, characterized by a deformation parameter introduced in the mass term, and compare it with the well-known absorption of a Schwarzschild black hole with the same mass. We compare our numerical results with the sinc approximation in the high-frequency limit, finding excellent agreement.

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