
# BLACK HOLES VERSUS WORMHOLES: SCATTERING, ABSORPTION AND QUASI-BOUND STATES

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We investigate the propagation of planar massless scalar waves in a geometry that interpolates between the Schwarzschild solution and a wormhole that belongs to the Morris-Thorne class of solutions. In the middle of the interpolation branch, this geometry describes a regular black hole. We use the partial wave approach to compute the scalar absorption cross section and the scattering cross section. Our results show that black holes and wormholes present distinctive spectra. We conclude, for instance, that the wormhole results are characterized by the existence of quasibound states which generate Breit-Wigner-like resonances in the absorption spectrum. Moreover, the differential scattering cross section for wormholes considerably decreases at large scattering angles for resonant frequencies.