



Scattering of scalar fields in Kerr-Newman spacetime

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We investigate the scattering of a massless scalar field by a Kerr-Newman black hole, considering the case of on-axis incidence. We use the partial wave method to find numerical results for the scattering cross section, which we compare with classical and semiclassical analytical results, obtaining excellent agreement. We present a selection of plots for different values of the black hole parameters.