

Rotating black holes as supercolliders of elementary particles

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Scattering of particles in the gravitational field of rotating black holes is considered. Expressions for scattering energy of particles in the centre of mass system are obtained. It is shown that scattering energy of particles in the centre of mass system can obtain very large values not only for extremal black holes but also for nonextremal ones. It is shown that for realizing of the collisions with infinite energy one needs the infinite interval not only of the coordinate time but also the infinite interval of the proper time of the free falling particle.