

Ultrahigh energy particle collisions near the black hole horizon in the strong magnetic field

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Abstract

We consider collision between two charged (or charged and neutral) particles near the black hole horizon in the strong magnetic field B . It is shown that there exists a strip near the horizon within which collision of any two such particles leads to ultrahigh energy in the center-of-mass frame (CM frame). The results apply to generic (not necessarily vacuum) black holes. © 2014 World Scientific Publishing Company.

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Keywords

Center-of-mass frame, dirty black holes, magnetic field