# Study of the Penrose process at WGC condition for the charge rotating BTZ black hole

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## Abstract

In this paper, we study the collision of spinning particles near a charged rotating BTZ black hole with WGC condition, and we obtain the extracted energy of the black hole by the Penrose process. We assume two particles fall from infinity and collide near a black hole. During this collision, one particle falls into the black hole, and the other escapes to infinity. We examine and calculate the maximum efficiency parameter ($\eta$). We mention that by exerting the weak gravity conjecture, we have $\eta_{max} \approx 1250$. On the other hand, the particles created in the collision have a specific range of spin, which can lead to the formation of unknown particles. This result can enhance our understanding of how black holes work, how they die, and better study physical, astronomical black holes. A thorough understanding of black holes helps us understand how a holographic system works.
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