

Emission of hawking radiation from an extremal Kerr-Newman black hole

Chiging Lasa Polo^{1,*},

1 Dept. of Physics, Rajiv Gandhi University, Rono Hills, Arunachal Pradesh

* Presenting author (chiging.polo@rgu.ac.in)

In this work, we study the Hawking radiation escaping from the horizon and non-horizon region out to a distant observatory in an extremal Kerr-Newman black hole background. We have examined the Hawking radiation with the help of the original hawking method in an extremal Kerr-Newman Black hole by taking into account the energy conservation, the angular momentum conservation and the electric charge conservation. We show that the emitted Hawking radiation behaves as if a semi classical tunneling process at the horizon of the Schwarzschild and Reissner-Nordstrom spacetimes and is no longer pure thermal after considering the black hole background as dynamical and the conservation of energy.