

Hawking Radiation of Vector Boson Particles from Kerr de Sitter Black Hole

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We study the tunneling of massive vector boson particles across the event horizon of Kerr de Sitter black hole by using Hamilton Jacobi ansatz to the Proca equation and the WKB approximation. The tunneling rate of the vector particles is determined by evaluating the imaginary part of the action of the particles crossing the event horizon and then, comparing with the Boltzmann factor, the Hawking temperature of Kerr de Sitter black hole for emission of vector boson particles is obtained. It is observed that the Hawking temperature depends on the mass and angular momentum of the black hole and also on the cosmological constant.