

Abstract Submitted
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Re-Examining Gravitational Tunneling Radiation when taking into account Quantum Gravity Effects JOHN VALENTINE, TREVOR PRESCOTT, GARDIO BLADO, Houston Baptist Univ — Although shown to theoretically exist, Hawking Radiation has yet to be detected. The paper entitled “Gravitational Tunneling Radiation” [1] by Mario Rabinowitz proposed a possible explanation by considering the gravitational tunneling effects in the presence of other bodies in the vicinity of the black hole. Rabinowitz showed that the power radiated (through gravitational radiation) by a black hole, P_R , is related to the power generated by Hawking Radiation, P_{SH} by $\frac{P_R}{T} \sim P_{SH}$ where T is the gravitational tunneling probability. The presence of other bodies lowers the gravitational barrier which in turn increases the gravitational tunneling probability thereby decreasing the Hawking radiation, P_{SH} . In this paper, we examine the modification of T in the presence of quantum gravity effects by incorporating the Generalized Uncertainty Principle.

[1] M Rabinowitz, “Gravitational Tunneling Radiation” Phys Essays, 12 (1999), 346-357 arXiv:astro-ph/0212249

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