



Gravitational bremsstrahlung and the Fulling-Davies-Unruh thermal bath

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The electromagnetic radiation emitted by an accelerated charged particle can be described theoretically as the interaction of the charge with the so-called Fulling-Davies-Unruh (FDU) thermal bath in the coordinate frame co-accelerated with the charge. We present a similar analysis of the gravitational radiation from a classical point mass uniformly accelerated, being pulled by a string satisfying the weak energy condition. In particular, we derive the interaction rate (with fixed transverse momentum) of this system (point mass and string) in the FDU thermal bath in the co-accelerated frame and show that it equals the graviton emission rate calculated using standard QFT in Minkowski spacetime.

Keywords: Bremsstrahlung, FDU thermal bath, interaction rate.