

**The response of an infalling Unruh-DeWitt detector through the event horizon of
a (3+1)-dimensional Schwarzschild black hole**

Keith Ng

University of Waterloo, Canada

Abstract

We calculate the response function of a particle detector falling through the event horizon of a (3+1)-dimensional Schwarzschild black hole, using techniques from arXiv:1309.7281v2. We present numerical evidence that the response of such a particle detector remains finite as it passes through the event horizon. We compare our work to previous results in lower dimensions, and comment on its relation to the firewall proposal.