Abstract Submitted for the APR06 Meeting of The American Physical Society

Effects of nonzero neutrino masses on black hole evaporation<sup>1</sup> WILLIAM HISCOCK, DANIEL BAMBECK, Montana State University — We study the consequences of nonzero neutrino masses for black holes evaporating by the emission of Hawking radiation. We find that the evolution of small, hot, black holes may be unaffected (if neutrinos are Majorana particles), or may show an increase in neutrino luminosity and a decrease in lifetime by up to a factor of approximately 1.85 (if neutrinos are Dirac particles). However, for sufficiently large (*e.g.*, stellar mass) black holes, nonzero masses result in neutrino emission being largely or entirely suppressed, resulting in a decrease in emitted power and an increase in lifetime by up to a factor of about 7.5.

<sup>1</sup>Work supported in part by NSF Grant No. PHY-0098787

William Hiscock Montana State University

Date submitted: 12 Jan 2006

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