Title:	Testing spontaneous collapse through bulk heating experiments: An estimate of the background noise
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Abstract:	Models of spontaneous wave function collapse predict a small heating rate for a bulk solid, as a result of coupling to the noise field that causes collapse. This rate is small enough that ambient radioactivity and cosmic ray flux on the surface of the earth can mask the heating due to spontaneous collapse. In this paper we estimate the background noise due to γ radiation and cosmic ray muon flux, at different depths. We demonstrate that a low-temperature underground experiment at a depth of about 6.5 kilometer water equivalent would have a low enough background to allow detection of bulk heating for a collapse rate λ of 10−16s−1 using presently available technology.
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