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Searching the Grail: A background free bb0nu experiment usig Ba2+ tagging in a High Pressure Xenon Chamber

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If the neutrino hierarchy is normal, the search for neutrinoless double beta decay, will need to be extended to reach a sensitivity of 10^27 or even 10^28 y. This will require exposures in the range of tens of ton year, but more importantly, a background free experiments, since even the slightest background will spoil their sensitivity. In this talk I will argue that such a background free experiment can be achieved by detecting the two electrons and the Ba2+ ion emitted in the decay of Xe-136 in (delayed) coincidence.

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