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### $^{212}\text{Pb}$ and $^{214}\text{Pb}$ Beta Decay Branching Ratios Measurement with XENONnT

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The XENONnT experiment, primarily designed for WIMP dark matter searches, features unprecedented levels of radiopurity, allowing for precision nuclear physics studies. Among these studies, measuring the branching ratios of beta decay in lead isotopes  $^{212}\text{Pb}$  and  $^{214}\text{Pb}$  with XENONnT introduces a novel approach in this research field. By employing signal and background model fits, it is possible to directly determine with enhanced precision the ground state branching ratios of these beta-decaying Lead isotopes, which are currently only indirectly estimated through spectroscopy studies. This contribution discusses the measurement procedure and presents preliminary updated branching ratio values for the beta decay of  $^{212}\text{Pb}$  and  $^{214}\text{Pb}$ .

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