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Energy calibration of the XENONnT Experiment

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The XENON Dark Matter Project uses a dual phase time projection chamber filled with liquid xenon to search for Dark Matter in the form of weakly interacting massive particles (WIMPs). The current iteration, the XENONnT experiment with 8.6 t of xenon, is taking science data and will also allow the investigation of other science topics due to its extremely low background especially for low energies.

The energy deposition as well as the three-dimensional location of an event in the detector is reconstructed using the fast scintillation light signal and a delayed charge signal. The latter is converted into a light signal by electroluminescence in the gaseous xenon phase above the liquid. The size of the primary scintillation light and of the charge signal are anti-correlated. This poster will outline the energy calibration of the XENONnT experiment using several mono-energetic gamma sources that can be found in the background data as well as in dedicated calibration data using external and internal sources.

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