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## Development of Scintillating Bolometer with Large Undoped and Eu-doped CaF<sub>2</sub> Crystals for Neutrinoless Double Beta Decay of <sup>48</sup>Ca

We are developing CaF<sub>2</sub> scintillating bolometers to search for for neutrinoless double beta decay of <sup>48</sup>Ca.

We realized large scintillating bolometers using 312g(50mm $\phi$   $\times$  50mm cylinder) of undoped and Europium-doped CaF<sub>2</sub> crystals with a readout technology of metallic magnetic calorimeters.

We used CaF<sub>2</sub> crystals with a large amount of internal <sup>238</sup>U-series impurities to evaluate detector performance such as energy resolution and particle identification.

We found that the thermal signal amplitudes are strongly position-dependent in both CaF<sub>2</sub> crystals.

By analyzing the sequential alpha-decays (222Rn-218Po-214Pb), the energy resolution without position dependence was evaluated, and obtained to be 0.2% at 5MeV, in the case of undoped CaF<sub>2</sub> crystal.

In the poster presentation, we will present the results obtained with this R&D measurements.

### Mini-abstract

Scintillating Bolometer with Large CaF<sub>2</sub> Crystals for Neutrinoless Double Beta Decay of <sup>48</sup>Ca

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