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Type: **not specified**

Excitation energy, angular momentum and deformation of fission fragments.

Monday, 9 March 2026 11:40 (25 minutes)

We present experimental results on the study of the radiative decay of fragments produced in the neutronless channel of $^{252}\text{Cf(sf)}$.

We use a twin ionization chamber loaded with an ultra-thin Cf sample and apply the 2E method to determine fragment masses, yielding excellent resolution (0.7 u) for neutronless events[1].

Specific fragmentations with the heavy fragment at $N=82$ were unambiguously separated from the rest of the data by applying simple energy gates.

An array of 54 large volume NaI detector allows measurement of the fragment de-excitation; photons being the only way to dissipate angular momentum and excitation energy.

The measured gamma ray spectra constrain the angular momentum and excitation energy distributions of the fragments. Combined with theoretical models, we infer the fragment deformation that best reproduce the observation[2,3].

[1] A. Francheteau et al., PRC 111, 034608 (2025).

[2] A. Francheteau et al., PRL 132, 142501 (2024).

[3] A. Francheteau et al., PRC - To be published.

Type of contribution

Invited Speaker

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