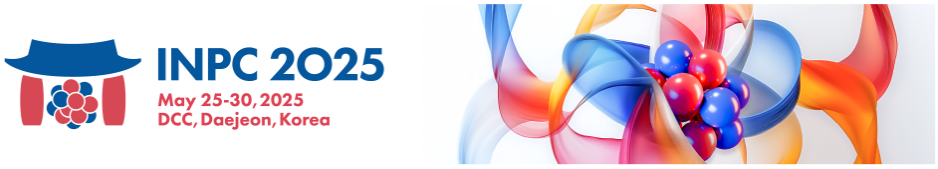

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MONUMENT. Study of the properties of ordinary muon capture for neutrinoless double beta decay and more.

Monday, 26 May 2025 15:25 (15 minutes)

The large energy and momentum transfer of ordinary muon capture makes it an excellent tool to study the nuclear structure at conditions similar to neutrinoless double beta decay and benchmark the corresponding nuclear matrix elements. The MONUMENT collaboration is performing a set of muon capture experiments at the Paul Scherrer Institute in Switzerland. In the report the measurement principle, the setup and analysis of the obtained data performed with different targets are presented.
The experimental setup is an array of germanium detectors collecting the radiation produced by the interaction of negative muons with a target. Various methods of data processing, identification and selection of useful events will be considered in order to obtain total and partial muon capture probabilities, as well as the yields of muon capture reaction products in the various nuclei such as 48Ti, 136Ba, 76Se, 100Mo.

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