

Status of the experimental campaign: nuBall2+PARIS+SiLCA at ALTO

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Within our COPIN collaboration we performed a series of successful experiments at the ALTO facility of IJC lab in the period January-June 2023. The experimental campaign covered physics cases that required a very sophisticated setup, built on three pillars: nuBall2 HPGe clover array, PARIS LaBr₃+NaI calorimeter and SiLCA, a new experimental setup based on a DSSD detector placed in the newly designed reaction chamber which has been developed at HIL Warsaw in 2022.

The availability of such a powerful setup allowed the experimental campaign to collect the data from the following experiments:

- *Detailed spectroscopy of fission isomers in uranium isotopes* (spokesperson J. Wilson, data analysis C. Hiver)
- *Evidence for enhanced collectivity in ⁵⁸Fe examined through Coulomb excitation* (Spokespersons: G. Pasqualato, J. Ljungvall, A. Stuchbery, data analysis G. Pasqualato)
- *Coulomb excitation of super-deformed band in ⁴⁰Ca* (Spokespersons: P. Napiorkowski, A. Maj, F. Azaiez, data analysis: K. Hadyńska-Klęk, J. Samorajczyk-Pyśk)
- *Search for the fission shape isomer in ²³²Th* (Spokesperson and data analysis: C. Hiver)
- *Investigation of high spin structures in ⁴⁴Ti and ⁴²Ca via discrete and continuum gamma spectroscopy using nuBall2, PARIS and OPSA setup* (Spokespersons: M. Matejska-Minda, K. Hadyńska-Klęk, data analysis: M. Matejska-Minda)
- *Emergence of collectivity near magic nuclei: Coulomb-excitation of ⁶²Ni* (Spokespersons: K. Hadyńska-Klęk, M. Rocchini, N. Marchini, data analysis: K. Hadyńska-Klęk)

In our talk we will present the status of the campaign and the data analysis from selected experiments as well as the perspectives for the future of our collaboration.