



FZU

Institute of Physics
of the Czech
Academy of Sciences

Invitation

to the seminar of Division of Elementary Particle Physics of the
Institute of Physics of the Czech Academy of Sciences



Dr. Martin Venhart

Institute of Physics,
Slovak Academy of Sciences
(Vice-president of the Slovak
Academy of Sciences)

Nuclear structure of odd-Au isotopes studied at ISOLDE facility with the TATRA spectrometer

Abstract: Odd-mass nuclei allow to study several phenomena of nuclear structure. Most notably, deformation parameters, both axial and triaxial, can be determined from the spectrum of their excited states. Odd-mass Au isotopes are known to exhibit multiple shape coexistence. Many configurations coexist at low excitation energies, resulting in an enormous density of excited states. In the seminar, a new data acquired with the TATRA spectrometer at ISOLDE facility at CERN will be presented. Excited states of the $^{181,183}\text{Au}$ isotopes were populated through beta decay of the $^{181,183}\text{Hg}$ precursors. Conversion electrons and gamma rays were detected simultaneously. The novel Broad Energy Germanium detector was used to detect gamma rays. Its supreme energy resolution, together with nearly ideal gaussian peak shape allowed to construct the level schemes of $^{181,183}\text{Au}$. An electric monopole transition was identified in ^{183}Au . Experiments at ISOLDE were complemented with in-beam gamma-ray spectroscopy and isomer spectroscopy performed at the University of Jyväskylä. Combination of these approaches allowed to extend the systematics of excited state of odd-Au isotopes. New rotational bands and isomeric states, that do not have precedents in heavier isotopes, were identified.

Seminar will take place exceptionally on **Wednesday, June 29, 2022 at 2PM** in the main conference hall in the building of the Institute of Physics, Na Slovance 2, Prague 8 on the ground floor.

A refreshment will be provided half an hour before the seminar.

The seminar will be also available via ZOOM video conference system. For more information, please see <https://indico.fzu.cz/event/113/>