



Contribution ID: 68

Type: **Invited oral presentation**

ACTAR science opportunities at ARIEL

Tuesday, 21 April 2026 11:40 (20 minutes)

The ACTAR TPC device is a time projection chamber, developed for nuclear physics experiments, that allows for the 3D tracking of charged particles in an active gas volume. It has been used since 2019 during several campaigns at GANIL (Caen, France), and in 2025 at TRIUMF (Vancouver, Canada). The detector was designed to work as an active target (the gas acts as a target for nuclear reaction) or in implantation-decay mode. Experiments in both mode have been carried out. The principle of these experiments is to extract the physics information for the 3D reconstruction of the tracks ions and particles involved in nuclear reactions or decays. The active target mode allows studying several types of reactions to address nuclear structure properties of exotic nuclei and/or unbound states. So far, experiments involving elastic and inelastic scattering transfer and charge exchange reactions have been performed.

The device is also well suited for exotic decay studies involving proton(s) emission. The decaying nuclei are implanted in the active volume, where the decay occurs and the trajectories of emitted particles are analyzed. Typical studies and recent results obtained in experiments performed with this detector will be presented together with possible future studies to be performed at ARIEL

Primary author: ROGER, Thomas (GANIL)

Co-author: Dr GIOVINAZZO, Jérôme (LP2IB)

Presenter: ROGER, Thomas (GANIL)

Session Classification: Opportunities in reaction studies with re-accelerated rare isotope beams at ARIEL