



Contribution ID: 9

Type: Oral

## ACTAR TPC: a tool for nuclear physics applications

*Wednesday, 8 May 2019 16:20 (20 minutes)*

The ACTAR TPC (Active Target & Time Projection Chamber) is a detector developed for fundamental nuclear physics studies such as nuclear reaction and structure studies as well as exotic decay and proton emission studies. It results from the joint efforts to build a second generation gaseous target and detector that merges the advantages of the first generation active target MAYA based on wire amplification and the CENBG TPC based on GEMs.

In addition to specific developments concerning the high density collection plane (with 16k pads) and the active volume, the device is equipped with the GET electronics that allows for time sampling of signal of each pad for a full 3D reconstruction of tracks. The pad planes are equipped with 128 and 256  $\mu\text{m}$  bulk micromegas (64x128 mm<sup>2</sup>) either on standard PCB or on a specific metal-core PCD. After the realization of demonstrator detectors that have been tested in various conditions including in beam tests, the final detectors (2 pad plane geometries have been designed) are now almost completed, with in-beam commissioning runs at GANIL, for active target and decay detector modes of the device.

We propose to present the characteristics of the detector in terms of particle tracking and energy analysis, resulting from the various source and beam test measurements. We will also address the issues related to the gas used in Active Targets.

The ACTAR TPC device is planned to be used in 2 experiments at GANIL in 2019.

**Primary authors:** ROGER, Thomas (Grand Accelérateur National d'Ions Lourds (FR)); GIOVINAZZO, Jerome (Centre National de la Recherche Scientifique (FR)); PANCIN, Julien (Grand Accelérateur National d'Ions Lourds (FR))

**Presenter:** ROGER, Thomas (Grand Accelérateur National d'Ions Lourds (FR))