Contribution ID: **468** Type: **Poster new technologies**

First operation of a ton scale dual phase liquid argon TPC

Future giant LAr TPCs at the ten-kiloton scale are now in the design and prototyping phase in the context of the Deep Underground Neutrino Experiment (DUNE). This technology is not only attractive as it is cost-effective and scalable to the multi-kiloton level, but also because LAr TPCs are excellent calorimeters with the ability to 3D reconstruct tracks of ionising particles.
Two different technologies are considered for DUNE: single phase and dual phase LAr TPC. The dual phase TPC allows to amplify the charge signal in the gas phase, offering several advantages over the single phase.
The first step towards large scale Dual Phase LAr TPCs has been the commissioning and operation of a 3x1x1 m3 detector with cosmic rays at CERN, which employed 4.2 tons of active argon. This poster will report the construction, commissioning and detector operation experiences. Issues, successes and lessons learned towards the operation of larger dual phase LArTPC volumes will be presented.

Authorship annotation

for the WA105 collaboration

Session and Location

Monday Session, Poster Wall #115 (Auditorium Gallery Left)

Poster included in proceedings:

yes

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