Contribution ID: **1159** Type: **Parallel session talk**

# Sub-GeV particle identification with aerogel Cherenkov threshold detectors and tagged photon beam for the Water Cherenkov Test Experiment

*Thursday 18 July 2024 11:36 (17 minutes)*

The Water Cherenkov Test Experiment (WCTE) will be installed in CERN's recently upgraded T9 "Test Beam" Area in Summer 2024. It has three goals: to prototype photosensor and calibration systems for Hyper-Kamiokande, to develop new calibration and reconstruction methods for water Cherenkov detectors and to measure lepton and hadron scattering on Oxygen.
The collaboration performed a 3-week-long beam test in July 2023. It uses newly developed aerogel Cherenkov threshold counters (ACTs) to perform an efficient separation of pions from muons in the sub-GeV range, which had not been done before. Additionally, a new compact tagged photon beamline was developed, composed of a Neodymium (N52) Halbach array permanent magnet and a hodoscope array placed downstream of the magnet. The combination of the ACTs and tagged photon beamline provides sub-GeV p, e, pi, mu and gamma test beams. Using this setup, the collaboration was able to estimate the beam flux of CERN's T9 beam.

## Alternate track

## I read the instructions above

Yes

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**Session Classification:** Detectors for Future Facilities, R&D, Novel Techniques

**Track Classification:** 13. Detectors for Future Facilities, R&D, Novel Techniques