



Contribution ID: 130

Type: **Poster Presentation**

Muon Tracking in an Opaque Scintillator Detector

Wednesday 5 March 2025 13:26 (1 minute)

The LiquidO Consortium is bringing a novel approach to particle detection by using opaque scintillator to achieve self-segmentation down to the millimetre scale. Opacity via short scattering length stochastically confines scintillation photons close to the point of production and arrays of wavelength-shifting fibres trap and transmit the light to silicon photomultipliers.

At Sussex, we use 64-fibre detector prototypes with a 3.2 mm fibre pitch. The prototypes are characterised with cosmic ray muons, and using a wax-based opaque scintillator a one-dimensional position resolution of 0.45 mm is achieved. This poster will discuss the muon tracking capabilities of a small-scale LiquidO detector, as well as compare the performance of the prototypes with transparent and opaque scintillator.

Author: LOCK, Jess (University of Sussex)

Presenter: LOCK, Jess (University of Sussex)

Session Classification: Lunch and Posters