

# DISCO Experiment

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DISCO (Directionality in Scintillation Observer) is a lab-scale experiment built at the University of Mainz to characterize water-based liquid scintillators (WbLS) and demonstrate the ability to separate Cherenkov and Scintillation light. It consists of three main components: the muon tracker, the test cell, and the light detection system. The test cell can be filled with water, a scintillator, or WbLS. DISCO uses cosmic muons for characterizing different detection mediums. The interaction of muons with the detection medium produces photons, which are detected by the light detection system. The light detection system consists of an array of fast 1-inch photomultiplier tubes (PMT) with sub-nanosecond time resolution. There is also a provision to replace the PMTs with LAPPDs in the future. The PMT signals are stored and processed offline to extract the photon hit-time and charge deposited in each PMT. This information is then used to reconstruct the tracks of the muon passing through the test cell. This talk discusses the experimental set-up of DISCO and the track reconstruction procedure.