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## Detection of Cherenkov light in liquid scintillators

Liquid organic scintillators are widely used in experimental nuclear and particle physics thanks to their relatively high light yield and good timing properties. Along with scintillation light, a charged particle moving in the scintillator can produce a certain amount of Cherenkov light, if its speed is sufficiently high. Since Cherenkov light is emitted instantaneously as the charged particle moves in the medium and has a spectrum that extends well above fluorescence light, it can be distinguished from this latter thanks to its timing and spectral properties.

SHELDON is a small-scale setup with high time-resolution aimed to study the separation of Cherenkov light in liquid scintillators. It will improve the reconstruction of the direction of incoming particles based on the detection of Cherenkov light in JUNO. The same setup can also help to optimize the performances of novel water-based liquid scintillators that could be used in future experiments and new detection technologies.

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