

Contribution ID: 1220

Type: Poster

## Design and performance of a liquid scintillator detector for the new EAS hybrid experiment

The Stereoscopic Water Cherenkov Detector Array (SWCDA) project is the next generation ground-based high-energy gamma-ray observation experiment, aiming to design a high-energy (HE) gamma-ray observatory sensitive to energy ranging 100 GeV –10 TeV. It consists of a liquid scintillator (LS) array and a stereoscopic water Cherenkov detector array. Considering the portable and low cost for future planning, LS detector is composed of a polymethyl methacrylate (PMMA) box used to contain LS, wavelength shifting (WLS) fibers, clear optical fibers used to collect and transmit the scintillation light, and a photomultiplier tube (PMT) used to convert the light signals into electrical signals. In this work, the design and optimization of the LS detector are discussed in detail. We have built prototype experiments inside the Tibet ASgamma air-shower array by the end of 2024. It will be jointly run with the Tibet ASgamma experiment in a hybrid array to test the performance.

## Collaboration(s)

Author: ZHANG, Ying

**Co-authors:** HUANG, Jing; CHEN, Ding (National Astronomical Observatories, CAS); Dr ZHAI, LiuMing; MENG, Yu; HU, KongYi; YU, YanLin; ZOU, YiHuan; LI, YiYang

**Presenter:** ZHANG, Ying

Session Classification: PO-2

Track Classification: Gamma-Ray Astrophysics