

# The Status and Prospects of the TRIDENT Deep-sea Neutrino Telescope

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While cosmic rays were first discovered over a century ago, the source of the most extreme energy components remains unknown. Next-generation neutrino telescopes with substantially improved sensitivity are required to pinpoint the sources of the diffuse astrophysical neutrino flux detected by IceCube. The TRIDENT Deep-sea Neutrino Telescope (TRIDENT) will instrument  $\sim 8\text{km}^3$  of seawater with optical detection modules  $\sim 3.5\text{km}$  deep in the South China Sea. With the use of advanced photon-detection technology and large dimensions, TRIDENT expects to observe the IceCube steady source candidate NGC 1068 at  $5\sigma$  within one year of operation. This degree of sensitivity will open a new domain for the diagnosis of the origin of cosmic rays and probe for fundamental physics over astronomical baselines. Presented here are the experiment's design, status and prospects, where a pilot project of ten strings for a technology demonstration is scheduled for 2026.

## Poster prize

No

## Given name

Donglian

## Surname

Xu

## First affiliation

Tsung-Dao Lee Institute, Shanghai Jiao Tong University

## Second affiliation

## Institutional email

donglianxu@sjtu.edu.cn

## Gender

Female

## Collaboration (if any)

**Primary author:** XU, Donglian (Tsung-Dao Lee Institute)

**Co-author:** MORTON-BLAKE, Iwan (Tsung-Dao Lee Institute / Shanghai Jiao Tong University)

**Presenter:** XU, Donglian (Tsung-Dao Lee Institute)

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