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An updated camera system for real-time Optical Calibration in TRIDENT

The performance of a neutrino telescope is fundamentally dependent on the optical properties of its detection medium. For deep-sea neutrino telescopes like TRIDENT, an accurate real-time, in-situ optical calibration system is essential due to the dynamic nature of the deep-sea environment. A camera-based optical calibration system was initially demonstrated in the TRIDENT Pathfinder experiment in 2021. This poster introduces an updated system combining two types of CMOS cameras for both optical calibration and bioluminescence monitoring. We present the design, instrumentation, overall strategy and performance of the updated system intended for long-term deep-sea operation.

Collaboration(s)

TRIDENT collaboration

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