

Monitoring System and Detector Stability of COSINE-100

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COSINE-100 is a direct detection dark matter experiment consisting of 106 kg of low-background NaI(Tl) crystal detectors located at the Yangyang Underground Laboratory in South Korea. The primary physics goal of COSINE-100 is to search for a WIMP-induced annual modulation signal to confirm or refute DAMA/LIBRA's claim of dark matter discovery. The search for an annual modulation signal requires a thorough understanding of time-dependent environmental effects and a high degree of detector stability. To help achieve the required level of stability, COSINE-100 has developed a monitoring system to measure operating conditions, such as detector gain, trigger rate, and light yield, over time. Additionally, we monitor several environmental conditions, including temperature, radon levels, and muon rates. Here, I will present the COSINE-100 monitoring system and discuss the achieved stability of the COSINE-100 detector.

Primary author: Mr THOMPSON, William (Yale University)

Presenter: Mr THOMPSON, William (Yale University)

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