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Installation of the JUNO-TAO experiment

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The Taishan Antineutrino Observatory (JUNO-TAO or TAO) is a satellite experiment of the Jiangmen Underground Neutrino Observatory (JUNO). The experiment is located at 44 m from Unit 1 and 217 m from Unit 2 of Taishan Nuclear Power Plant (NPP). TAO primary objective is to measure the reactor electron antineutrino (\mathbb{Z}_e) spectrum with sub-percent energy resolution, providing a model-independent reference spectrum for JUNO's neutrino mass hierarchy determination. Beyond JUNO's primary goals, TAO will also provide benchmark measurements to test nuclear databases, study spectral shape anomalies, improve isotopic IBD yield estimates, enable reactor monitoring (fuel and status), and probe new physics such as light sterile neutrinos.

This poster focuses on the installation phase of the TAO experiment. A description of the integration and testing of major subsystems is provided, including the central detector, SiPMs and readout electronics, cabling for signal transmission and power supply, and finally veto, shielding and calibration systems. Commissioning is expected to begin in June 2025, with early performance validation and data acquisition preparations already underway, marking the final step toward full detector operation and routine data-taking.

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