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Reactor Power Monitoring With ALARM Neutrino Detector

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During the fission process in a nuclear reactor, a substantial flux of antineutrinos is generated. These antineutrinos carry valuable information about the reactor core. By measuring the neutrino flux and energy spectrum, it is possible to observe the status of the reactor, which makes neutrino detection a possible probe for reactor monitoring. Sun Yat-sen University is currently constructing a modular plastic scintillator neutrino detector named ALARM (Array of Lattice for Anti-neutrino Reactor Monitoring). This detector will be deployed this year at the Taishan Nuclear Power Plant in Guangdong Province, China, to conduct experimental research on neutrino-based reactor monitoring, and evaluate the practical capabilities of such neutrino detectors.

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