



Contribution ID: 259

Type: Poster

Monitoring nuclear reactors with anti-neutrino detectors: the ANGRA project

We describe the status of the ANGRA Project, aimed at developing an anti-neutrino detector for monitoring nuclear reactors. Indeed the detection of anti-neutrinos provides a unique handle for non-invasive measurements of the nuclear fuel. This kind of measurements are of deep interest for developing new safeguards tools which may help in nuclear non-proliferation programs. The ANGRA experiment, placed at about 30 m from the core of the 4 GW Brazilian nuclear power reactor ANGRA II, is based on a water Cherenkov detector with about one ton target mass. A few thousand anti-neutrino interactions per day are expected. The latest results from simulations and the status of the construction are presented.

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Track Classification: 07 - Neutrinos