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## **RENO-50: Neutrino Mass hierarchy and Neutrino Observatory**

RENO-50 is an underground reactor neutrino detector about 50 km away from the Hanbit reactor array (16.8 GWth) in Younggwang, Korea. The default detector would consist of 18 kton ultra-low radioactivity liquid scintillator in a cylindrical vessel (Diameter: 30m, Height: 30 m) surrounded by mineral oil buffer where 15,000 PMTs (20 inch) are attached to collect photons coming out as a result of the Inverse Beta Decay (IBD) process. The main goals of RENO-50 are to determine neutrino mass hierarchy and precise measurements of neutrino mixing parameters. Additionally RENO-50 can study neutrinos from the Earth, the Sun, and Supernova, therefore it can serve as a long term neutrino observatory. We would like to introduce RENO-50 and the status of our MC study in this poster.

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