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Reactor Experiment for Neutrinos and Exotics at Hanbit nuclear power plant in Korea

We report a conceptual design of Reactor Experiment for Neutrinos and Exotics (RENE), which primarily aims to search for the sterile neutrino oscillation at $\Delta m^2_{41} \sim 2eV^2$.
The joint study of RENO and NEOS experiments showed a hint for the sterile neutrinos at $\Delta m^2_{41} \sim 2.4eV^2$ and $\sim 1.7eV^2$, which overlap with the allowed region by the Reactor Anti-neutrino Anomaly.
This RENE detector can also be used for precision measurements of the flux and spectrum of the reactor electron antineutrino ($\bar{\nu_e}$) and the separation of $\bar{\nu_e}$ spectra from ^{235}U and ^{239}Pu.
In this poster, we report the concept of the RENE detector and physics cases.

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