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A first study of the physics potential of a reactor neutrino experiment with Skipper-CCDs

Skipper-CCDs are special CCD detectors sensitive to single electron excitations to the silicon valence band, and thus sensitive to very low nuclear recoils. This opens up the unique opportunity of detecting coherent elastic neutrino nucleus scattering at comercial nuclear reactor powerplants. To exemplify the physics potential and limitation of these experiments, we study how background rates and several systematics impact the determination of the weak mixing angle.

Mini-abstract

Resilience of a reactor neutrino experiment with Skipper-CCDs to systematic uncertainties.

Experiment/Collaboration

vIOLETA

Primary authors: MARTINEZ SOLER, Ivan Jesus (Fermilab and Northwestern U.); MACHADO, Pedro (Fermilab); ROSAURO, Salvador (U. Autonoma Madrid); PEREZ-GONZALEZ, Yuber F (Fermilab/Northwestern University)

Presenter: ROSAURO, Salvador (U. Autonoma Madrid)

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