



Contribution ID: 48

Type: **Invited talk**

CONNIE latest results and future prospects

Thursday 31 October 2024 16:15 (30 minutes)

The CONNIE experiment employs high-resistivity silicon CCDs to detect coherent elastic neutrino-nucleus scattering (CEvNS) of reactor antineutrinos with silicon nuclei at the Angra-2 reactor. In 2021, the experiment was updated with two Skipper-CCDs, improving the sensitivity down to 15 eV. This introduces Skipper-CCDs as a novel tool in reactor neutrino detection. We present new results from 300 days of data collected between 2021 and 2022, totaling an exposure of 18.4 g-days. No excess was observed in the difference between the reactor-on and reactor-off periods, resulting in upper limits at 95% CL on CEvNS. Additionally, we explore the potential of Skipper-CCDs through three searches for new physics: constraints on neutrino interactions via light vector mediators, limits on dark matter-electron scattering from diurnal modulation, and a search for relativistic millicharged particles generated by reactors. Finally, we discuss future plans for increasing the detector mass.

Author: BONIFAZI, Carla (ICAS-ICIFI-UNSAM/CONICET & IF-UFRJ)

Presenter: BONIFAZI, Carla (ICAS-ICIFI-UNSAM/CONICET & IF-UFRJ)

Session Classification: Invited talks