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Detecting CEvNS and beyond with CONUS

Sunday 5 September 2021 13:30 (20 minutes)

The CONUS experiment aims at detecting coherent elastic neutrino nucleus scattering (CEνNS) at the nuclear power plant in Brokdorf, Germany, which has a maximum thermal power of 3.9GW$_{th}$. Four low energy threshold high-purity point contact Germanium spectrometers are set up in an elaborate shield achieving background levels comparable to experiments located much deeper underground.
With the data collected during Run-1 and Run-2 of the experiment and a full spectral analysis it was possible to determine the most stringent upper limit on CEvNS with reactor antineutrino in the fully coherent regime so far. This will be shown in the talk. Moreover, novel limits on physics beyond the standard model can be set such as on non-standard interactions (NSIs) in the neutrino-quark sector and on the neutrino magnetic moment. An overview on the latest results will be presented in the talk.

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