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(I) Coherent Elastic Neutrino-Nucleus Scattering and the NEWS-G collaboration

Tuesday 8 June 2021 17:05 (20 minutes)

NEWS-G (New Experiments With Spheres-Gas) is a rare event search experiment using Spherical Proportional Counters (SPCs). Primarily designed for the direct detection of dark matter, this technology also has appealing features for Coherent Elastic Neutrino-Nucleus Scattering ($\text{CE}\nu\text{NS}$) studies. $\text{CE}\nu\text{NS}$ is a process predicted by the standard model and can be used as a tool to probe new physics and other applications, such as monitoring neutrino flux from nuclear reactors or sterile neutrino search.

The NEWS-G collaboration is studying the feasibility of detecting $\text{CE}\nu\text{NS}$ at a nuclear reactor using an SPC. I will discuss the efforts made by the NEWS-G collaboration to assess the feasibility of such an experiment.

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