

Search for Solar Boron-8 neutrino and light dark matter with XENON detectors

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The XENON collaboration has developed a series of liquid xenon detectors to lead the search for WIMP dark matter. The tonne-scale liquid xenon detectors (such as XENON1T and XENONnT) are sensitive not only to WIMP dark matter but also to the Solar Boron-8 neutrinos. In this talk, I will describe how to improve the analysis of XENON1T and XENONnT data to enhance their sensitivities to Boron-8 neutrinos and light dark matter. Analysis strategy to lower the energy threshold and suppress new backgrounds will be highlighted. With these efforts, we will show that the detection of Solar Boron-8 neutrinos through their coherent elastic scattering off Xenon target is possible in XENONnT. Results and perspectives of this analysis with XENON1T and XENONnT data will also be presented.

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