

Studying hydrogen-xenon mixtures for direct dark matter detection

Thursday, 11 July 2024 16:30 (20 minutes)

Adding a light element such as hydrogen to xenon dark matter detectors is projected to expand experimental sensitivity to sub-GeV dark matter. The HydroX effort is exploring this technology for future dark matter experiments. As part of this effort, we have built a test stand at SLAC to study the signal properties of hydrogen-doped xenon dark matter detectors. I will discuss the design of the test stand, which consists of an instrumented gaseous xenon time projection chamber and piping system, as well as a separate vessel for hydrogen after-pulsing studies. Preliminary commissioning data will be presented, and future run plans will be discussed.

Primary author: WANG, Ann (Stanford/SLAC)

Presenter: WANG, Ann (Stanford/SLAC)

Session Classification: Parallel 1

Track Classification: Parallel session: Direct detection