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Demonstrations of a Right-Side Up Bubble Chamber Using C3F8 for Dark Matter Detection SALVATORE ZERBO, Drexel Univ, PICO COLLABORATION — The PICO experiment is an international collaboration that is attempting to directly detect dark matter candidates through the observation of WIMP-nucleon interactions in bubble chambers located deep underground at SNOLAB. PICO experiments have provided world-leading constraints on spin-dependent WIMP-proton interactions. At Drexel University, we have constructed a "right-side-up" bubble chamber, which places the target volume above the pressure balancing bellows, rather than below as in previous PICO detectors, that will act as both a small-scale model and as a test chamber for future PICO experiments. This new design will lead to further improvements in the constraints of WIMP-nucleon cross-sections through a higher purity target volume. With the Drexel bubble chamber, we have successfully observed a variety of event types and have begun analyzing gathered data, proving the right-side up design's viability for the next-generation bubble chambers. In the future, we will work towards completion of data analysis, and we will continue to test features for use with the bubble chambers located at SNOLAB.

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