

## Acoustic studies for alpha background rejection in dark matter bubble chambers detectors

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The Chicagoland Observatory for Underground Particle Physics (COUPP) employs bubble chambers to detect WIMP-nucleus interactions. Acoustic techniques have been successfully used in order to reduce alpha background. In this communication we present our studies to better understand the generation, propagation and detection of acoustic signals in bubble chambers, the simulation tools developed and the acoustic test bench that is being developed to validate the tools. The aim of the studies is to optimize the acoustic systems and the analysis techniques for the third generation (500 kg) bubble chamber. Moreover, the first results of these studies give some hints on how to design more efficient and adapted piezoelectric sensors and where to locate them.

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