

Smith college

Dark Matter Search: listening to the dark, seeing the dark and charging from the dark)

Over the past few decades, the search for the missing matter of the Universe so-called dark matter has become one of the main focus of particle physics research. Many experiments around the globe are utilizing diverse detection techniques to directly or indirectly search for dark matter under the form of Weakly Interacting Massive Particles (WIMPs). These detector techniques are all unique and present their own advantages and disadvantages.

In this seminar, I will first discuss some evidence of dark matter and its candidates. I will then discuss the different detection technologies used to directly hunt for dark matter with an emphasis on the detection technologies I have been involved with so far (bubble detector technology, spherical proportional counters and noble liquid time projection chambers) as well as discuss the status and prospects of the world biggest and cleanest dark matter detector, LZ, that I am currently working on. I will end this seminar by sharing my career journey and discussing a few of the challenges I have overcome to succeed as a female experimental physicist.

