

Deep Learning in the EXO-200 experiment

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The EXO-200 experiment searches for the neutrinoless double beta ($0\nu\beta\beta$) decay in ^{136}Xe with an ultra-low background single-phase time projection chamber (TPC) filled with 175kg isotopically enriched liquid xenon (LXe). The detector has demonstrated good energy resolution and background rejection capabilities by simultaneously collecting scintillation light and ionization charge from the LXe and by a multi-parameter analysis. The combination of both signatures allows for complementary energy estimates and for a full 3D position reconstruction. This talk will briefly present the concept of the detector and summarize the potential of Deep Learning based methods toward improving low-level event reconstruction and high-level data analysis in the EXO-200 experiment.

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Session Classification: Talks