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The Search for Exotic Physics with EXO-200 JOSIAH WALTON, University of Illinois at Urbana-Champaign, EXO-200 COLLABORATION — The Enriched Xenon Observatory (EXO-200) is an experimental program searching for neutrinoless double beta decay ($\beta\beta0\nu$) using an extremely low-background time projection chamber containing 175 kg of liquid xenon enriched to 80% ^{136}Xe. Observation of this lepton-number violating decay would demonstrate that neutrinos are Majorana particles and allow determination of the absolute neutrino mass scale. With over 2 years of data collected since May 2011, EXO-200 previously reported the first observation of two neutrino double beta decay ($\beta\beta2\nu$) in ^{136}Xe and placed stringent constraints on the $\beta\beta0\nu$ mode of ^{136}Xe. In addition to searching for $\beta\beta0\nu$, the EXO-200 detector is capable of performing searches for more exotic physics. This talk will present recent results from new analyses of the EXO-200 data, including searches for Majoron emission and other exotic decay modes.

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