

Physics Division Seminar

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Exotic Atoms and Molecules for Nuclear Science

Host: Matthew Dietrich

Monday, May 18, 2020 - 3:30 PM (CDT) Via BlueJeans

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Abstract: Precise knowledge of the interaction between the atomic nucleus and the surrounding electrons offers a complementary insight into the atomic nucleus and the fundamental particles and forces of nature. Exotic atoms and molecules - those containing nuclei with extreme proton-to-neutron ratios - can be made to investigate a particular nuclear structure or symmetry-violating effect. Thereby offering high sensitivity to explore the emergence of nuclear phenomena, the study of fundamental symmetries, and the search for new physics. In this seminar, I will present recent highlights from laser spectroscopy experiments of these exotic species, containing isotopes produced in extreme regions of the nuclear chart. The relevance of these results to some of the pressing questions of nuclear science will be discussed.