

Tests of Fundamental Symmetries with Radioactive Molecules

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Rapid progress in the experimental control and interrogation of molecules is enabling new opportunities for investigating the fundamental laws of our universe. In particular, molecules containing heavy, octupole-deformed nuclei, such as radium, offer enhanced sensitivity for measuring yet-to-be-discovered parity and time-reversal violating nuclear properties. In this colloquium, I will present recent highlights and perspectives from laser spectroscopy experiments on these species, as well as discuss the relevance of these experiments in addressing open problems in nuclear and particle physics.