

SPECTROSCOPY OF SHORT-LIVED RADIOACTIVE MOLECULES

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Molecules containing heavy and octupole deformed radioactive nuclei are predicted to provide enhanced sensitivity to investigate the violation of fundamental symmetries and to search for physics beyond the Standard Model of particle physics. However, experimental measurements of such radioactive systems are scarce. Octupole deformed nuclei are very rare in nature or do not occur naturally. Thus, their study requires to overcome major experimental challenges. This contribution will discuss the recent achievements in laser spectroscopy of radioactive molecules at CRIS, ISOLDE-CERN. This talk will discuss recent spectroscopy measurements of short-lived radium fluoride molecules (RaF) alongside future perspectives in the study of other radioactive molecules. The impact of these developments in fundamental physics research will be discussed.