

Abstract Submitted
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Precision laser and microwave spectroscopy of radioactive Be isotopes provided from a projectile fragment separator RIPS A. TAKAMINE, M. WADA, T. SONODA, T. NAKAMURA, Y. YAMAZAKI, Y. KANAI, T.M. KOJIMA, T. KUBO, RIKEN, K. OKADA, Sophia University, P. SCHURY, University of Tsukuba, H. IIMURA, JAEA, I. KATAYAMA, KEK, S. OHTANI, University of Electro-Communications, H. WOLLNIK, University of Giessen, H.A. SCHUESSLER, Texas A&M University — Radioactive Be isotope beams from RIKEN RIPS at approximately 1 GeV were thermalized in an RF ion guide gas cell and extracted by a combination of DC and inhomogeneous RF electric fields. The extracted ions were transported via a carbon-OPIG to a linear RF trap located in UHV environment. They were further cooled down to 10^{-6} eV by laser cooling for precision atomic spectroscopy. The ground state hyperfine splitting of ^7Be and ^{11}Be were measured directly with accuracies of 10^{-7} by microwave-laser double resonance method. The optical transition frequencies for $2s_{1/2}$ - $2p_{3/2}$ transition of ^7Be , ^9Be , ^{10}Be , and ^{11}Be ions were also measured with accuracies of 10^{-9} by laser-laser double resonance method. These experiments aim to independently measure the nuclear charge and magnetization radii by the isotope shift and the Bohr-Weisskopf effect, respectively, especially for one neutron halo nucleus ^{11}Be . We discuss the RF-carpet ion guide technique and the results of spectroscopy experiments.

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