

Abstract Submitted
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Sr+ isotope shift measurement¹ XIAOYANG SHI, MICHAEL STRAUS, University of California, Santa Barbara, XINGHUA LI, Key Laboratory for Physical Electronics and Devices of the Ministry of Education Shaanxi Key Lab of Information Photonic Technique, Xi'an Jiaotong U, SEAN BUECHELE, MINGYU FAN, CRAIG HOLLIMAN, ANDREW JAYICH, University of California, Santa Barbara — Precision isotope shift spectroscopy can improve our knowledge of atomic and nuclear structure. Combined with a King plot analysis, such measurements could also constrain sources of new physics beyond the standard model of particle physics. We present preliminary isotope shift measurements of the $5s\ ^2S_{1/2} \rightarrow 5p\ ^2P_{1/2}$ electric dipole transition with a precision at the 100 kHz level. With $^{88}\text{Sr}^+$, $^{86}\text{Sr}^+$ and $^{84}\text{Sr}^+$, we will measure the isotope shifts of the dipole-allowed $4d\ ^2D_{5/2} \rightarrow 5p\ ^2P_{3/2}$ transition, and the narrow $5s\ ^2S_{1/2} \rightarrow 4d\ ^2D_{5/2}$ electric quadrupole transition. We plan to work with the radioisotope $^{90}\text{Sr}^+$ to test for King plot nonlinearities.

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