Abstract Submitted
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Driving the optical clock transition in Ra^{+1} CRAIG A. HOLLIMAN, MINGYU FAN, ANDREW M. JAYICH, University of California, Santa Barbara — Radium is an intriguing candidate for a trapped ion optical clock due to its high mass and favorable wavelengths−the cooling transition at 468 nm is far from the UV. The $S_{1/2} \rightarrow D_{5/2}$ transition at 728 nm has a sub-Hz natural linewidth, making it suitable for an optical clock transition. We report driving and frequency measurements of the radium ion's clock transition as well as the other narrow electric quadrupole transition from the $S_{1/2}$ to $D_{3/2}$ state. We also report measurements of the 802 nm $D_{5/2} \rightarrow P_{3/2}$ cleanout transition frequency, as well as the frequencies of other low-lying transitions in Ra^+.

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