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Trapping and Optical Detection of Doubly-charged Ytterbium Ions[1] MARTIN SCHAUER, JEREMY DANIELSON, Los Alamos National Laboratory, DAVID FELDBAUM, University of Florida, SAIDUR RAHAMAN, BAOZHOU SUN, XINXIN ZHAO, JUSTIN TORGERSON, Los Alamos National Laboratory — Forbidden optical transitions in trapped ions are of great interest for high precision spectroscopic applications. The insensitivity to ambient fields of the $^1S_0$ – $^3P_0$ transition in Yb^{2+} coupled with the isolation from the environment provided by trapped ions makes this system particularly appealing. We report on trapping and optical detection of isotopically-pure, laser-cooled samples of doubly-charged Ytterbium ions. We discuss future work to be done with these and singly-charged Ytterbium ions in the same apparatus.

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