Abstract Submitted
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Measurement of the radial matrix elements for the $6s^2S_{1/2} \rightarrow 7p^2P_J$ transitions in cesium[1] AMY DAMITZ, GEORGE TOH, Purdue University, ERIC PUTNEY, University of New Mexico, CAROL TANNER, University of Notre Dame, DANIEL ELLIOTT, Purdue University — We report measurements of the dipole matrix elements of the cesium $6s\,^2S_{1/2} \rightarrow 7p\,^2P_{1/2}$ and $6s\,^2S_{1/2} \rightarrow 7p\,^2P_{3/2}$ transitions. Each of these determinations is based on direct, precise comparisons of the absorption coefficients between two absorption lines. For the $\langle 7p\,^2P_{3/2}||r||6s\,^2S_{1/2}\rangle$ moment, we measure the ratio of the absorption coefficient on this line with that of the D_1 transition. The moment of the D_1 line has been determined with high precision previously by many groups. For the $\langle 7p\,^2P_{1/2}||r||6s\,^2S_{1/2}\rangle$ moment, we measure the ratio of the absorption coefficient on this line with that of the $6s\,^2S_{1/2} \rightarrow 7p\,^2P_{3/2}$ transition. These measurements have implications on cesium parity non-conservation theory.

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