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57 - The $5s \rightarrow 6s$ Stark shift measured via two-photon spectroscopy in laser-trapped rubidium

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We have measured the Stark shift of the $5s \rightarrow 6s$ transition in rubidium using two-photon spectroscopy. The Rb atoms are held in a magneto-optical trap (MOT) at the center of two optically-transparent field plates providing unhindered optical access for the MOT beams. The Stark shift was determined for electric fields from 0.350 kV/cm to 5.249 kV/cm. The 993 nm spectroscopy laser was referenced with a Pound-Drever-Hall frequency offset lock to a ULE cavity with a frequency stability better than 200 kHz/day. We will present the results of these measurements and compare them to theory from literature.

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