

Abstract Submitted  
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**Frequency-offset separated oscillatory fields technique**<sup>1</sup> N. BEZGINOV, A.C. VUTHA, I. FERCHICHI, C.H. STORRY, E.A. HESSELS, York University — Improved measurements in atomic hydrogen are needed to shed light on the proton radius puzzle. We are measuring the Lamb shift in hydrogen ( $n = 2, S_{1/2} \rightarrow P_{1/2}$ ) using a frequency-offset separated oscillatory fields (FOSOF) method. The advantages of this method include its insensitivity to atomic beam intensity fluctuations and the microwave-system frequency response. We present experimental results obtained with this method, towards a new measurement of the proton charge radius.

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