

# LEPP JOURNAL CLUB

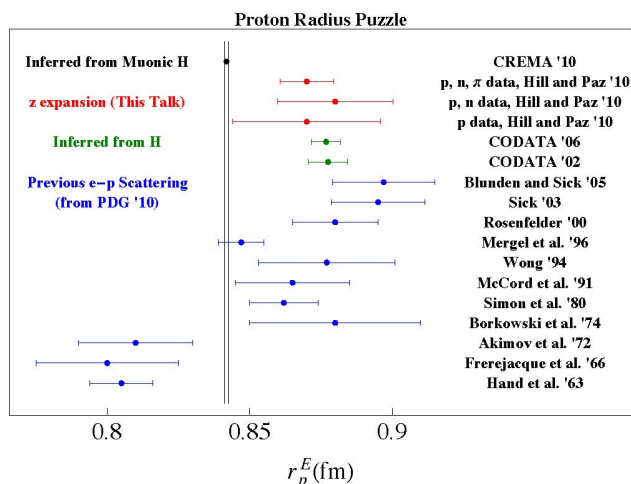
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**Wayne State University**



## Charge Radius of the Proton

Recently, the charge radius of the proton was extracted for the first time from the Lamb shift in muonic hydrogen. Very surprisingly, the value is five standard deviations away from the regular hydrogen result. The extraction of the proton radius from muonic hydrogen depends on a theoretical input. In this talk I will describe the study, done together with Richard J. Hill, of the hadronic uncertainty in the theoretical prediction, using the tool of an effective field theory, namely NRQED. I will also describe the model-independent extraction of the charge radius from electron-proton scattering. We have shown that previous extractions, spanning a period of over 40 years, have sometimes underestimated their error by a factor of two or more.



**Friday**

**Sept. 14, 4:00pm**

**301 Physical Sciences Building**

**(Refreshments, 3:45pm)**

