

The Proton Radius (PRad) Experiment at Jefferson Lab

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The proton charge radius (R_p) is one of the most fundamental quantities in physics. Precision knowledge of its value is critically important for both nuclear and atomic physics –especially for the spectroscopy of atomic hydrogen. Recent high precision measurements of R_p using the muonic hydrogen atom demonstrated up to eight standard deviation smaller value than the accepted average from all previous experiments performed with different methods. This fact triggered the well known “proton charge radius puzzle” in hadronic physics. The PRad collaboration at Jefferson Lab for the last four years developed a novel magnetic-spectrometer-free e-p scattering experiment to address this puzzle. This experiment is currently scheduled to run in May and June of this year. The specifics of the method, the experimental characteristics of the setup together with the upcoming run status will be presented in this talk.

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