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The Proton Radius Puzzle: Experimental Status and Outlook

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The proton is the dominant ingredient of visible matter in the Universe. Consequently, determining the proton's basic properties such as its charge radius, rp, has attracted tremendous interest in its own right. An accurate knowledge of rp is essential for understanding how the strong interaction works in the confinement region. It also has a major impact on the precise determination of the Rydberg constant, a fundamental constant. The 2010 muonic hydrogen spectroscopy based measurements of rp with its unprecedented less than 0.1% precision triggered the well-known "proton radius puzzle" in nuclear and atomic physics. Since then a number of new spectroscopy and lepton scattering experiments have been performed or are currently underway. Several more experiments have been proposed. I will review the experimental status and discuss the prospects of future experiments.