The Pressure Distribution inside the Proton

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The origin of quark confinement is one of the most important questions in modern particle and nuclear physics because confinement is at the core of what makes the proton a stable particle and thus provides stability to the Universe. The internal quark structure of the proton can be revealed by deeply virtual Compton scattering. In this process, an electron scatters off quarks inside the protons which subsequently emit a high-energy photon. The electron, photon and recoil proton are detected in coincidence. I will report on the first measurement of the pressure distribution experienced by the quarks in the proton. This work opens up a new area of research on the fundamental gravitational properties of protons, neutrons and nuclei, which can provide access to their physical radii, the internal shear forces acting on the quarks and their pressure distributions.

Tuesday, September 18, 2018

4:00 pm

Roger W. Finlay Conference Room

Coffee and Cookies at 3:50 pm