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GEM Detectors and Preliminary Analysis of Proton Charge Radius (PRad) Experiment at Jefferson Lab[1] XINZHAN BAI, University of Virginia, PRAD COLLABORATION — The PRad experiment (E12-11-106[2]) was recently performed at Jefferson Lab in Hall B, it was designed to measure the proton charge radius through the elastic electron proton scattering process, using a non-magnetic-spectrometer method. The experiment reaches very low ep scattering angles and thus an unprecedented low four-momentum transfer squared region, Q^2 from 2×10^{-4} to $0.1(GeV/c)^2$. The experiment measures the proton charge radius by extracting the electric form factor of proton with a sub-percent precision. Gas Electron Multiplier (GEM) detectors have contributed to reach the experimental goal. A pair of world largest GEM detectors, and a high resolution calorimeter(HyCal) were utilized in the experiment. In this talk, we will present the performance of GEM detectors approached in the experiment, such as efficiency and other characteristics, and preliminary analysis of the experimental data.

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