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Probing Hadron Structure at Jefferson Lab using Polarized Electron Scattering.[1]

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Almost eighty percent of the present physics program at Jefferson Lab requires polarized electron beams to probe nuclear structure. The accelerator can provide beam to the three experimental halls simultaneously from the same 100 kV DC Gun and GaAs photocathode. Multiple hall operation is a key design feature of the lab that maximizes the physics output. However, multiple hall operation also imposes restrictions on users. For example, only specific beam energies can transfer the full component of longitudinal polarization from the source to multiple halls simultaneously. This talk describes the details of polarized beam delivery to experimental halls and the factors that affect beam quality, particularly those factors relevant for conducting parity violation experiments. In addition, the state-of-the-art and future prospects for higher current and beam polarization will be discussed.

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