

Status of the Jefferson Lab Polarized Electron Beam Program

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All of the nuclear physics experiments conducted at CEBAF at Jefferson Lab begin with an electron beam from a 100 kV DC high voltage GaAs photogun, whether electron polarization is required or not. This presentation describes recent experience using strained superlattice GaAs photocathode material that provides significantly higher electron polarization than conventional strained layer GaAs. Modelocked Ti-Sapphire drive lasers have been replaced with fiber-based drive lasers that provide considerably more power and rely on the accelerator-friendly technique of gain switching to obtain RF-pulsed light that can be easily phase locked to the accelerator RF. In addition, there has been considerable progress toward conducting "routine" parity violation experiments: the HAPPEX and G⁰ collaborations report exceptional beam quality, in large part due to an appreciation for proper Pockels cell alignment procedure. Finally, load lock gun and low-voltage Mott polarimeter projects will be discussed.

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