THE G0 EXPERIMENT AT JEFFERSON LAB

L. Lee (for the G0 collaboration)
Department of Physics and Astronomy, University of Manitoba
Winnipeg, MB R3T 2N2

The electron-proton parity-violation "G0" experiment at Jefferson Lab aims to make a determination of the 'strange' quark currents in the proton. Two new proton ground state matrix elements will be measured which are sensitive to point-like 'strange' quarks and hence to the quark-antiquark sea in the proton. The matrix elements of interest are the elastic scattering vector weak neutral current 'charge' and 'magnetic' form factors, GZ E and GZ M, respectively. By measuring the very small parity-violating asymmetries in elastic electron-proton scattering at momentum transfers between 0.1 and 1.0 $(GeV/c)^2$, and combining these asymmetries with previously measured electromagnetic form factors, new information about the proton weak form factors can be obtained. This new high precision experiment is presently in the installation and commissioning phase.

E-mail:lrylee@triumf.ca