

Proton G_E/G_M

Polarization transfer in elastic scattering: $H(\vec{e}, e' \vec{p})$

Assumed Conditions:

$I_{\text{beam}} = 75 \text{ uA}$

Beam Polarization = 85%

Target Length = 40 cm

Proton Polar. Efficiency = 50%

Acceptance:

$\Delta\Omega_e = 130 \text{ msr}$ (largest Q^2)

$E_e > 4.0 \text{ GeV}$

$E_p > 3.5 \text{ GeV}$

$$\frac{G_E}{G_M} = -\frac{P_t}{P_l} \frac{E + E'}{2M} \tan \frac{\theta}{2} [1 + (\text{few } \%)_{2\gamma}]$$

P_t, P_l : transv. and long. recoil proton polarization

Kinematics and expected accuracy

E (GeV)	Q^2 (GeV ²)	θ_E (deg)	P_e (GeV)	Θ_p (deg)	P_p (GeV)	Days	$\Delta\mu G_E/G_M$
6.6	5.0	25.3	3.94	29.0	3.48	1	0.023
8.8	8.0	25.9	4.54	22.8	5.12	10	0.032
11.0	12.0	28.2	4.60	17.4	7.27	30	0.074

