

Goals: Provide numerical input for Mott scattering in Geant4  
Provide estimate of error on these calculations  
Provide theoretical estimate of uncertainty for experiment  
Provide guidance of requirements for improved calculation

### Short Term (next weeks-months)

Xavier will numerically compute Mott scattering

- cross-section
- Sherman function
- spin Transfer functions (T,U)

for electron with energy  $E$  from atom  $Z$  in angular steps  $T$  considering

- finite nuclear size
- Coulomb distortion

and provide errors associated with

- numerical computation
- center-of-mass effects
- Coulomb screening

### Long Term (next months-season)

Charles will consider higher order radiative effects, that do not include nuclear excitation

Wally discussed problem with Xavier, received references for code he uses