## Study of the sensitivity to CFF of the beam-charge asymmetry for proton DVCS

• Grid of bins used for nDVCS proposals

## > Different grid of bins can be adopted for final proposal

- Central kinematics of each bin, used to generate observables, computed using MC
- Observables generated with the VGG model: BCA, BSA, TSA, DSA

> More observables can be included (CS, DBCA) for final proposal

• Count rates obtained from nDVCS count rates (GENEPI+FastMC) multiplied by 7 (CS ratio pDVCS/nDVCS) and 10 (to remove neutron efficiency factor) + luminosity/polarization factors to compute error bars

## > This will be redone with actual pDVCS simulation + fastMC for the final proposal

- CFF fits done with the CFF fitting code by Michel Guidal: 7 CFFs included (Im(Retilde)=0); CFFs vary within +-5\*VGG
- Comparison of fit results with/without BCA and to original VGG values for the 7 CFFs
  - 4 bins in  $Q^2 = (1, 2, 3.5, 5, 10) \text{ GeV}^2$
  - 4 bins in  $x_B = (0.05, 0.15, 0.3, 0.45, 0.7)$
  - 4 bins in  $-t = (0.1, 0.35, 0.65, 1.0) \text{ GeV}^2$
  - 24 bins in  $\varphi$

- Beam polarization: 90%
- Target polarization: 80%, packing fraction 0.17
- 80 days for BSA and BCA,  $L = 10^{35} \text{ cm}^{2/3}$
- 100 days for TSA,  $L = 2*10^{35} \text{ cm}^{2/s}$







XB





х<sub>в</sub>















## Conclusions

7-CFFs fit has two advantages compared to 4-CFF fit:

- No model dependent assumptions (aside from Im(Etilde)=0)
- Shows sensitivity to all CFFs, with interesting « surprises »

BCA brings improvements to Re(H), Re(Htilde), Im(E), Re(Etilde)

Work will be improved with correct yields for pDVCS, finer grid of bins (?), added observables (DBCA, CS?)