

## Results of a Monte-Carlo simulation of coincidence efficiency in a $\gamma \rightarrow pp$ reaction.

- The coincidence efficiency is defined as the percentage of protons detected by RHRS for events where a proton is detected in the LHRS.
- For each beam energy  $10^5$  iterations were used, leading to a statistical error better than 1%.
- The bremsstrahlung spectra for each energy was calculated using the attached "g3hemc.C" file. Bremsstrahlung energy was randomly chosen in the last 100 MeV according to that spectra.
- The internal pair momenta was chosen in the range 0-250 MeV according to the "Salme" distribution of the neutron momentum as calculated by "MCEEP".
- The simulation assumes:
  - maximum detector acceptance, that is a horizontal angle of  $\pm 28$  mr, a vertical angle of  $\pm 60$  mr and a momentum acceptance of  $\pm 4.5\%$ , located at a 1.2m distance from the target's center ( $z=0$ ).
  - 100% overall detector efficiency.
  - a 1D target at  $-10\text{cm} < z < +10\text{cm}$

