Acceptance Study Status

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Status Update

- Longitudinal setting
- The cross-section should be calculated with these cuts (central region):
  - Theta: (-0.01, 0.03)
  - Phi: (-0.015, 0.015)
  - Slow raster current: roughly 50% (same number for all runs)
- For each run, g2psim is used to generate a simulation file with 5M events which covers the whole acceptance range (96 msr, +/-0.04 dp)
- To do the cross-section analysis, the simulation file should be used with same binning to get the acceptance N_{bin}/N_{total} x 96 x 0.08 x P_0

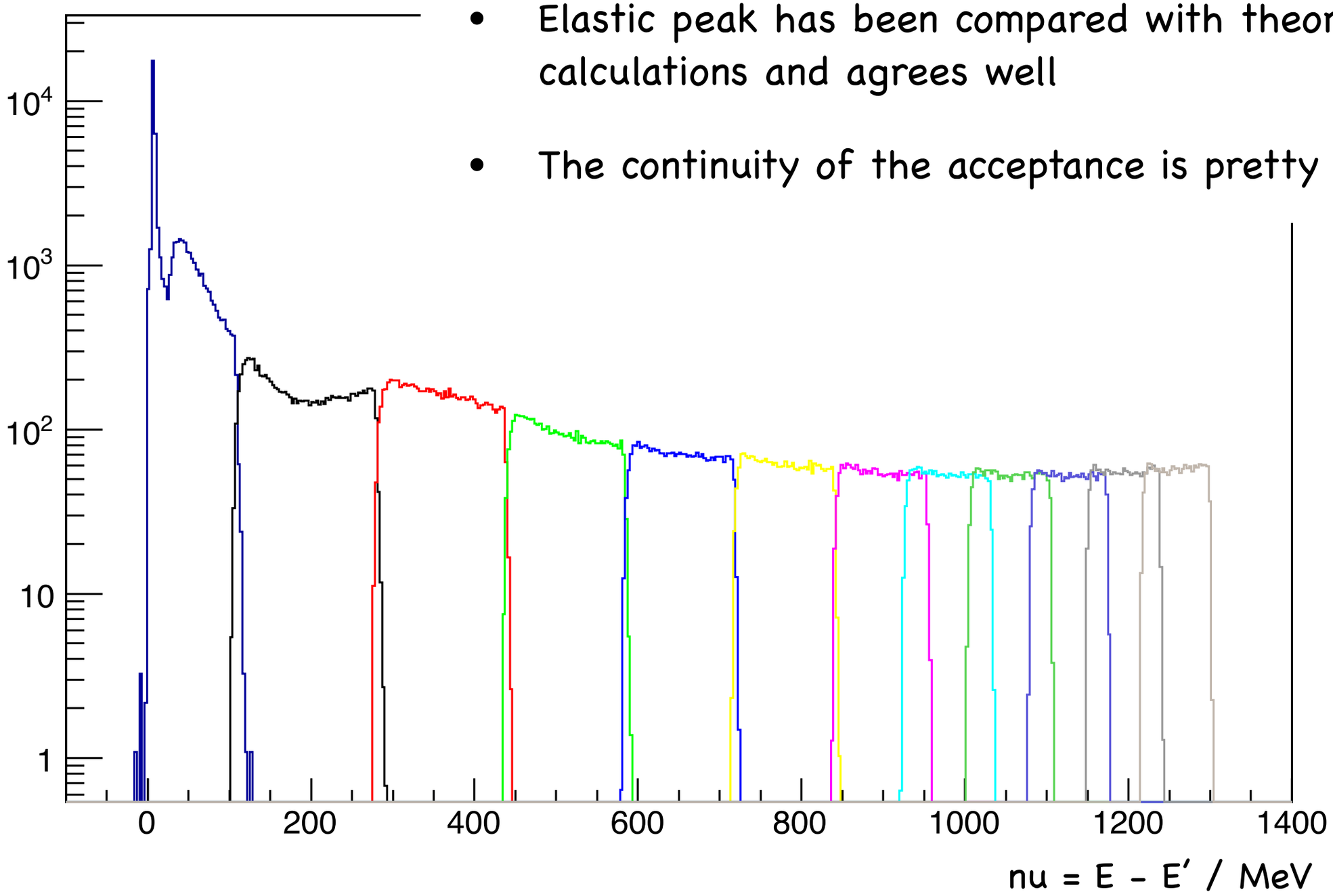
$$\sigma_0 = \frac{P_S N}{\frac{Q}{e}(\rho \Delta Z) T_L \epsilon_{\mathrm{det}}} \frac{1}{\Delta\Omega \Delta E' A}$$

initial angle and momentum coverage in simulation

ratio of accepted events and total events

Status update

- Elastic peak has been compared with theoretical calculations and agrees well
- The continuity of the acceptance is pretty well



Acceptance Study

- One thing required as an input for the acceptance study is the conversion between the slow raster current in the data and the raster size in the simulation
    - This value should go into the analysis database (will contact Ryan)
- The simulations on /volatile are deleted for some unknown reason
- Rerunning it this week
- Should be saved into the /mss to keep for the analysis

Transverse Setting

- The continuity of the acceptance is not as well as the longitudinal setting
- Are working on a correction for this