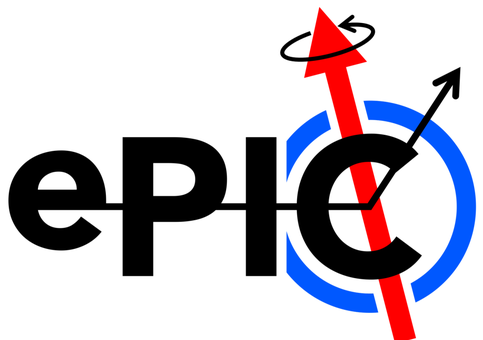
EIC Tracking Update

ePIC Tracking WG Meeting, Feb 12, 2026

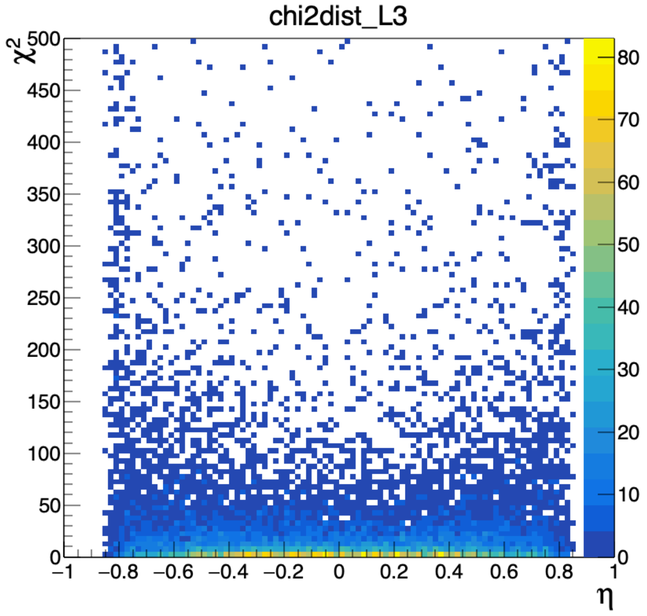
Vassu Doomra, UC Berkeley



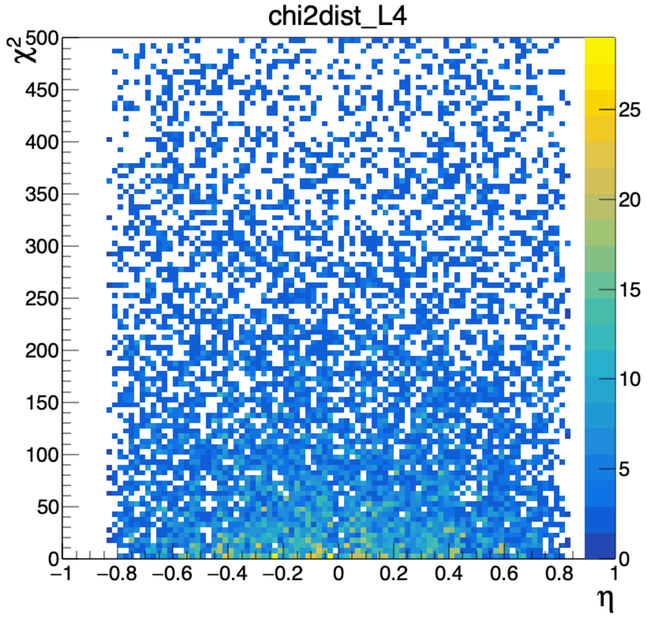
Berkeley
UNIVERSITY OF CALIFORNIA

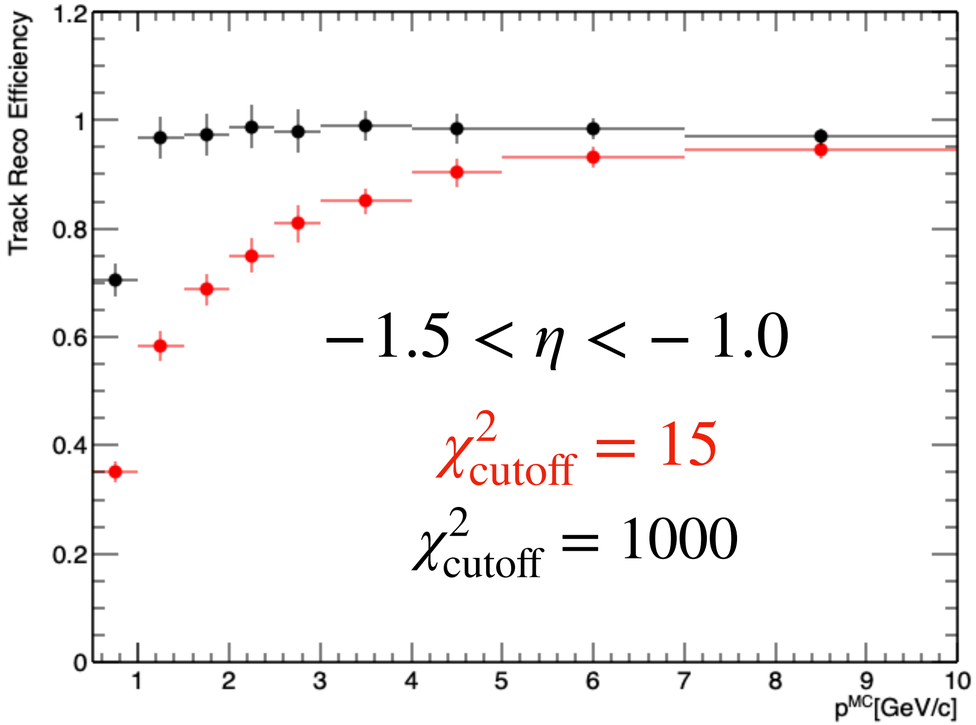
Recap

The default χ^2 selection of 15 appears to be partially responsible for the reduced tracking efficiency at low momentum, particularly in the transition regions.



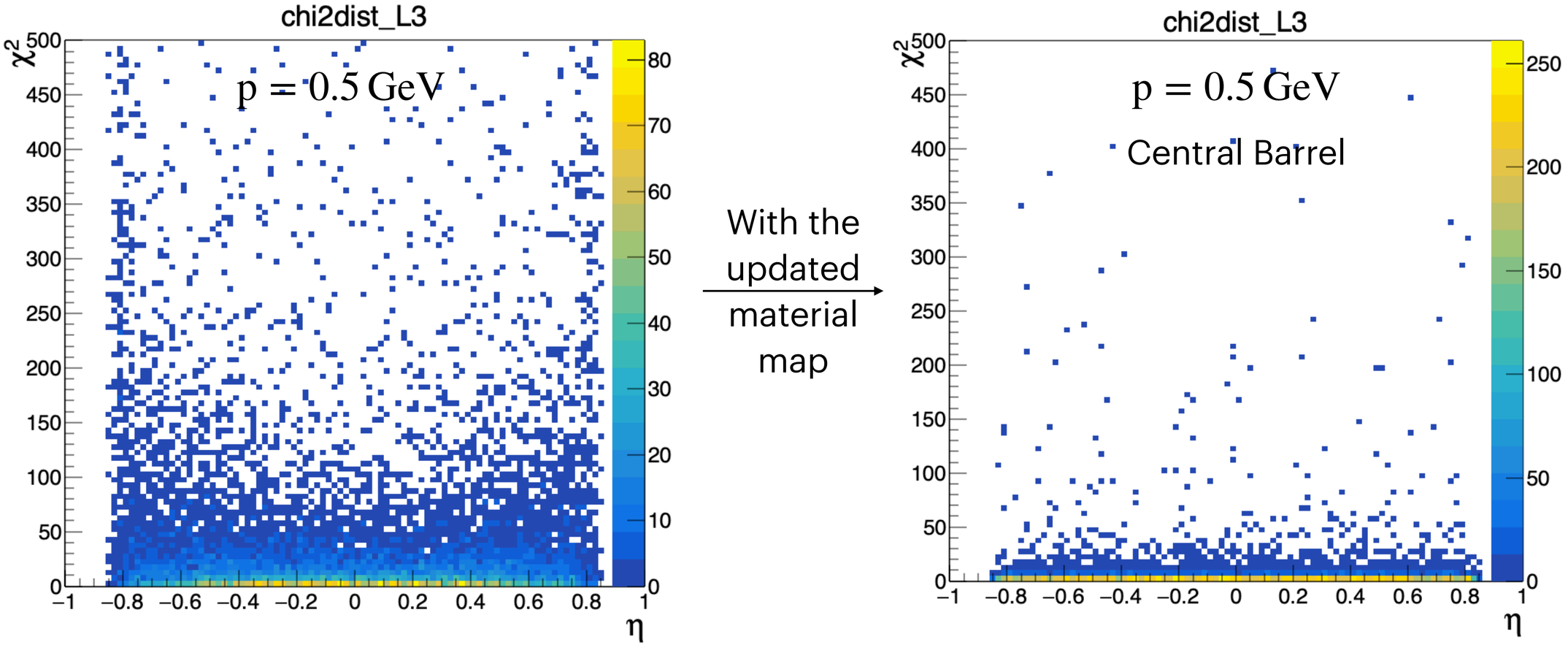
$p = 0.5\,\mathrm{GeV}$





After the material map update

- We see a significant improvement in the χ^2 distributions with the updated material map (Shujie's talk)



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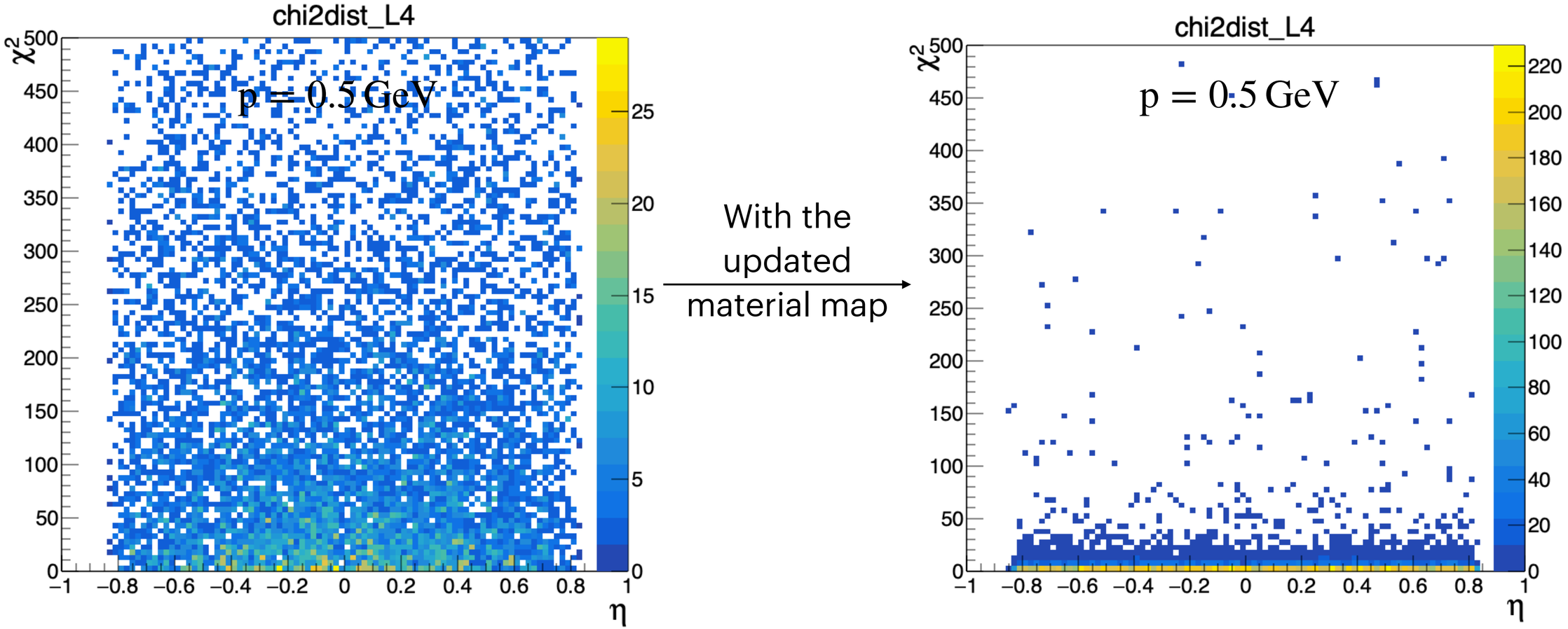

Summary & Outlook

- The χ^2 distributions seem to be in much better shape with the material map update.
- To do:
  - Run simulations for the end-caps and transition regions.
  - Evaluate the tracking performance in these regions.
  - Determine an appropriate updated selection cut based on the results.