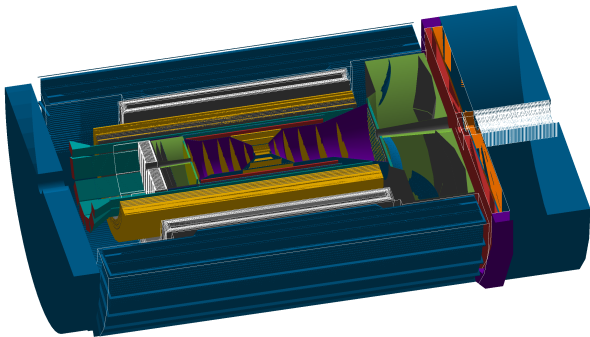


ePIC time-of-flight tracking impact

- momentum and angular resolutions in Craterlake -

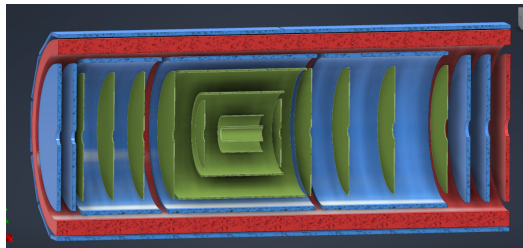


Nicolas Schmidt (ORNL)

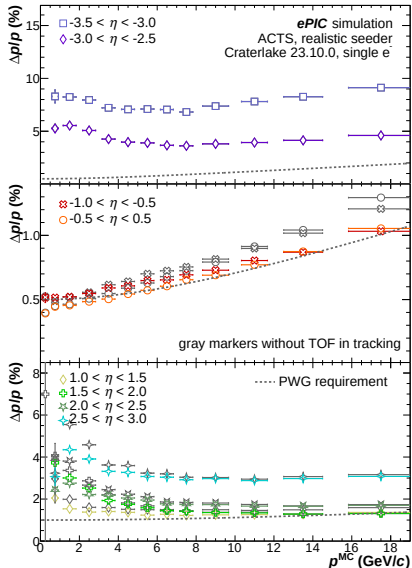


Craterlake detector setup:

- Additional MPGD layers added in all regions
→ higher number of hit points for track finding
- Shifted positions of some MAPS layers
→ expected worse resolution in bwd with shorter lever arm
- TOF layers provide solid tracking points and timing info
→ crucial information for background rejection



Momentum resolution



- Comparison of tracking momentum resolution
→ colored markers craterlake 23.10.0 default
→ gray markers exclude TOF from simulation and tracking
- Visible improvement at high momentum in barrel with TOF in tracking
- Low momentum performance improved for forward region due to TOF points

Angular resolution

- Angular resolution not impacted by additional TOF hits in tracking
- TOF detector material with negligible impact as well

