CEPC Ref-TDR ECAL: key issues

Yong Liu (IHEP),
for the CEPC Ref-TDR ECAL team
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ECAL: key issues

- **Calibration based on collision data: using Bhabha events**
  - (Target) Calibration precision vs. Bhabha event rate per module
  - Transparency change in BGO (due to TID): Bhabha event rate is sufficient to reflect changes?
  - Status: ongoing studies based on simulation
- **Signal integration window**
  - Impacts to single particles (with calorimeters) and jets (with CyberPFA)
  - Impacts from Beam-Induced Backgrounds (BIB)
  - Status: performance studies with single photons (done), single hadrons and jets (ongoing)
- **Mass production and QA/QC protocols**
  - Crystals: dimension tolerances, surface roughness, flatness, reflective foil wrapping, uniformity along crystal length, uniformity among different crystals and batches
  - SiPMs: uniformity of key parameters (e.g. breakdown voltage, gain, crosstalk, PDE)
  - Considerations: requiring prototyping and in-depth discussions with different vendors; beyond the Ref-TDR scope → future R&D activities in next years