10 TeV detector paper status and plans

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reporting the results of an early chat with Tova and Sergo

Informal detector team meeting 31/08/2023

Turning our work into a paper

Lots of good work done over the summer.

Now it's time to channel these into a publication (tentative target: PRD).

Plan:

- Identify must-haves (today)
  - Deliver studies in the next ~2 weeks, otherwise descope accordingly
- Agree on tentative outputs
  - Deliver plots within 1 month from now, most things can go in parallel to must-haves investigations
- Write up (myself, Tova, Karri and Sergo volunteered for the write-up/editing, but contributions of text and more than welcome)
- Circulate to IMCC for endorsement, hit arXiv ~ end of October

The must-haves

- Understand track-to-cluster association
- Check tracking efficiency with realistic beamspot width
- Get some magnet expert to agree on minimum thickness of steel vessel around magnet
- Calibration curves for photons, electrons, hadrons

The nice-to-haves

- Understand track seeding in endcaps
- Check that muons with toroidal field make sense
- Any further material supporting the time structure of BIB in VXD

Anything else?

Tentative table of contents

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Keep detailed list of target plots in

https://docs.google.com/document/d/1YBCttRKfxUpVErEqADR5hXOZUmc6VIaH2huvRlcrOjo/edit#heading=h.4ahmlchr3n52

Important technicalities

We need to **harmonise the style** of figures **AND** make it **trivial to re-generate** them for the finishing touches.

Propose to

- Use ROOT for the plotting (I am old)
- For each plot, generate a dedicated input root file containing the relevant histograms / TGraphs / …
- For each plot, make a simple python macro that read the input root file and does the styling

Thank you!