

Update: GenAI for BIB Team

04/10/2026

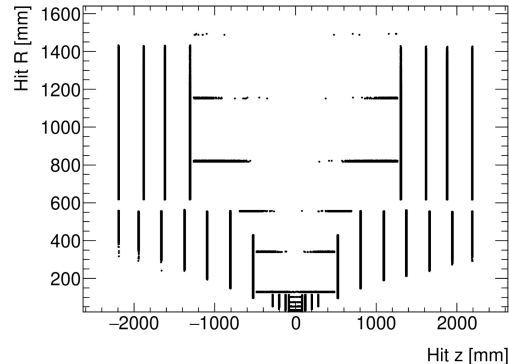
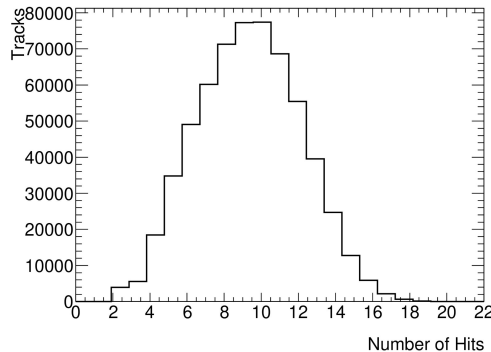
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Progress so far

Target for indistinguishability:
AUC = 0.5

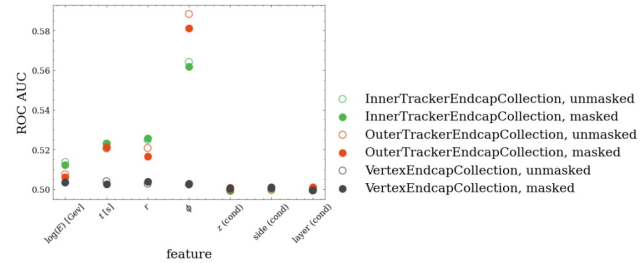
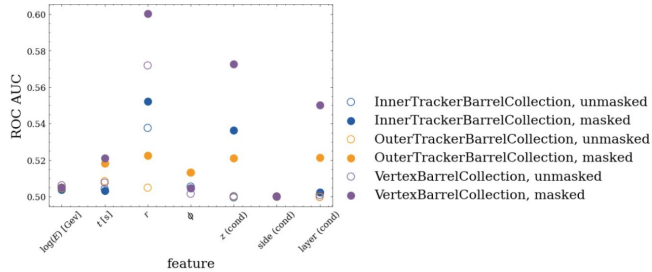
- We have flow models for all 6 tracker detector that are reasonably similar to the data
 - The current approach is to condition the flow on the side #, layer #, and layer coordinate (z for endcaps, r for barrel)
 - This means we can't **generate** the layer coordinate, but they should be sufficiently close to delta functions...
- These samples can be digitized and reconstructed – and we appear to get tracks!

	% of samples pass mask	AUC before masking	AUC after masking
Outer Tracker Barrel	90.65	0.571	0.582
Inner Tracker Barrel	64.71	0.662	0.632
Vertex Barrel	64.97	0.668	0.676
Outer Tracker Endcap	97.73	0.639	0.632
Inner Tracker Endcap	99.17	0.629	0.627
Vertex Endcap	99.69	0.528	0.523

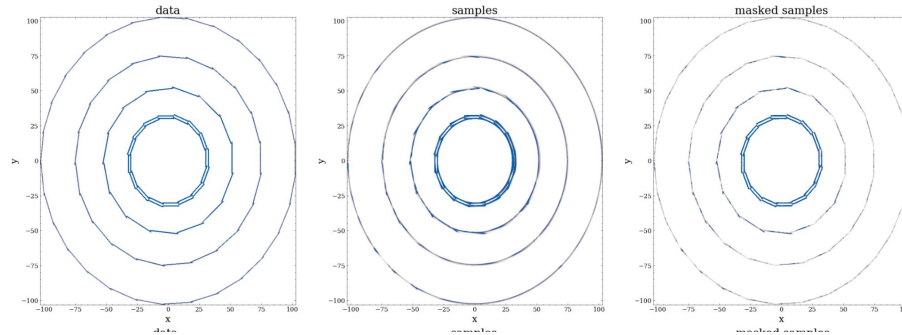


Blocks so far

- Continuing to push down the AUC of the flow samples – now we can focus on individual features



- Most barrel hits are rejected during digitization – we may need an alternative to a material map that doesn't throw away hits



Open Tasks

- More downstream metrics – what would the community need for a minimum viable paper?