

Status update

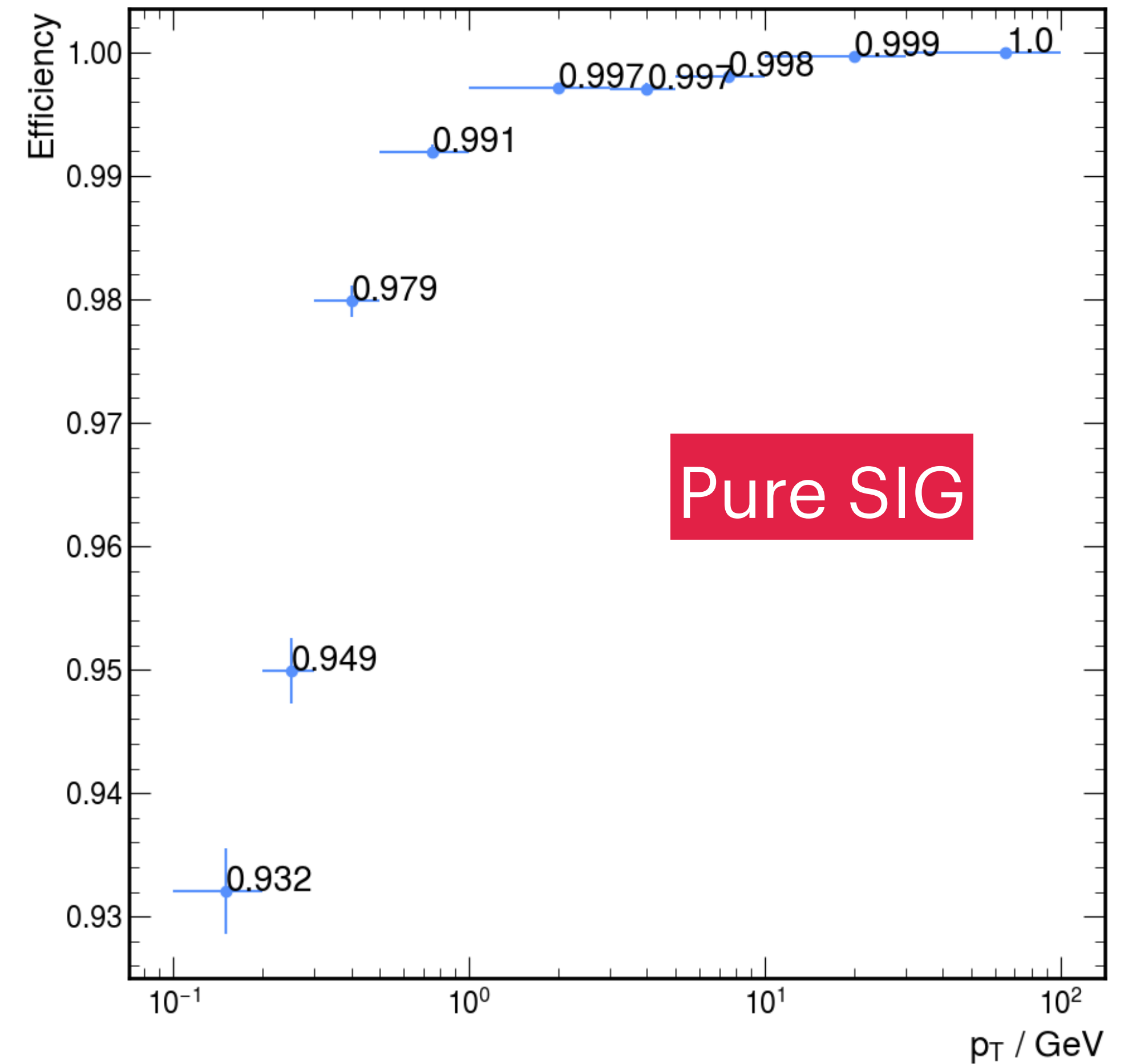
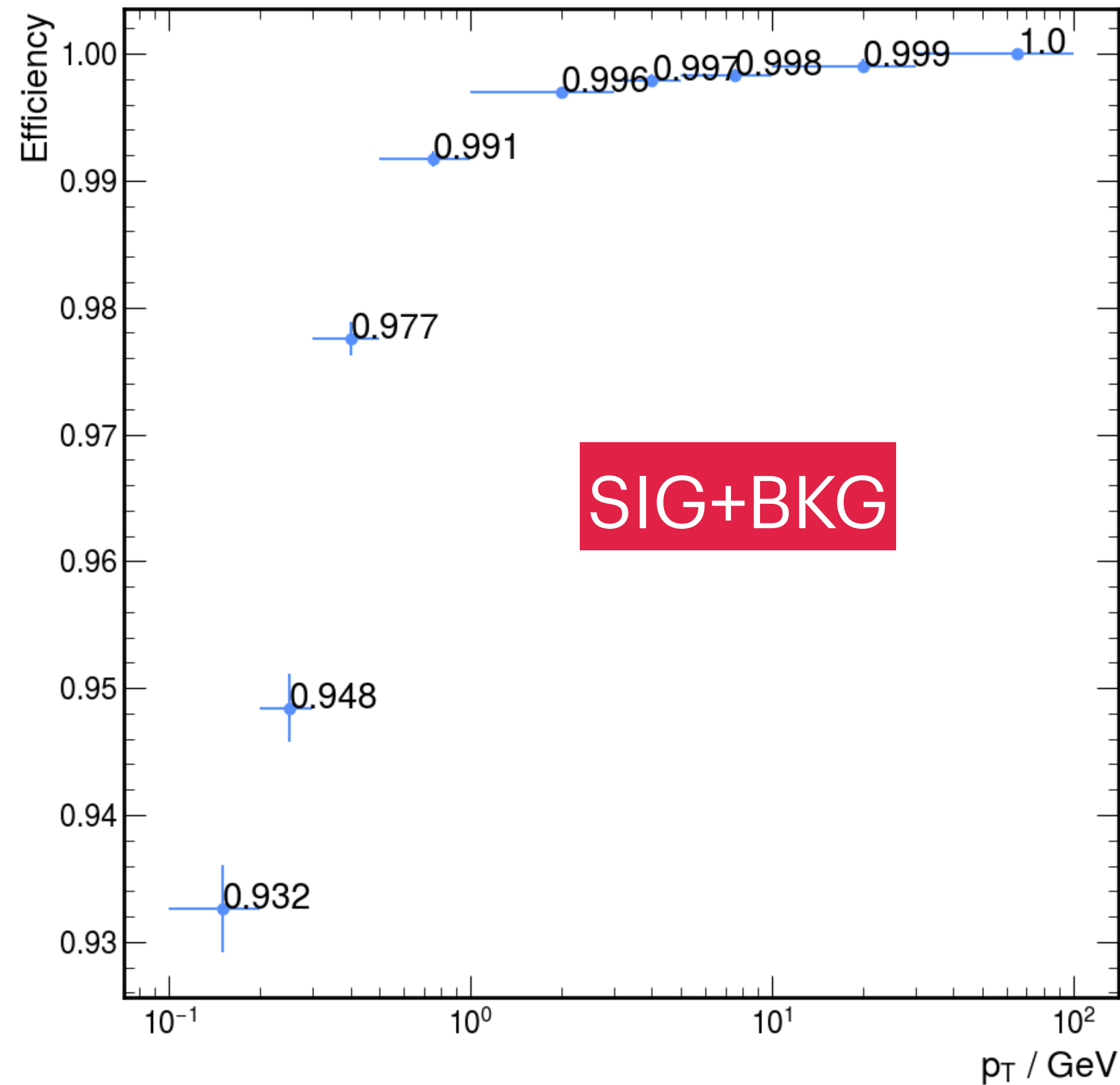
Beam-background for tracking

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New development from SW

- MR250 allows users to configure the background radiation dose
 - Todo
- MR261 updates the time-windows for ITK(OTK) from 200(1000) to 30(30) ns
 - There is no impact on tracking...

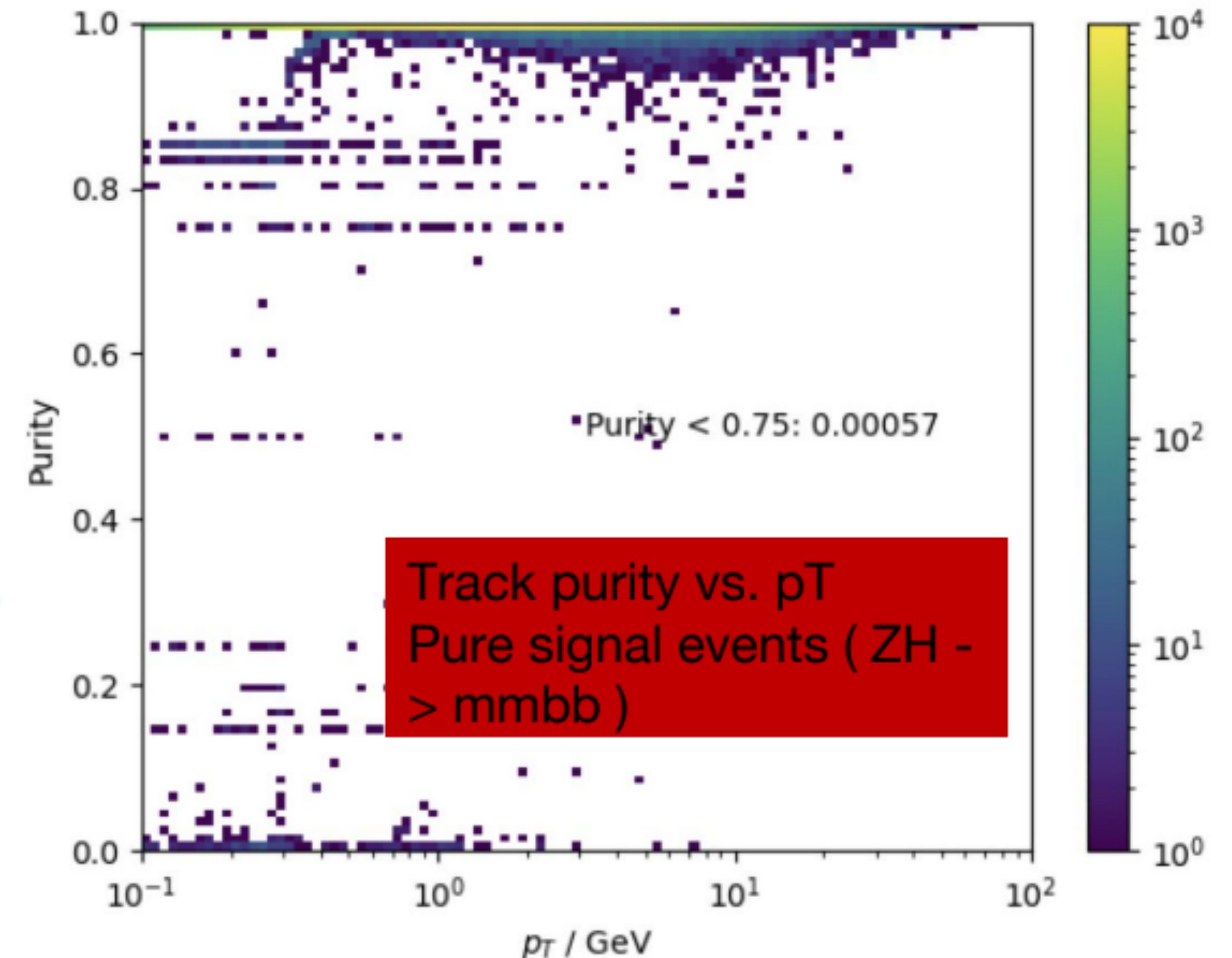
Trk Efficiency (nnHgg)



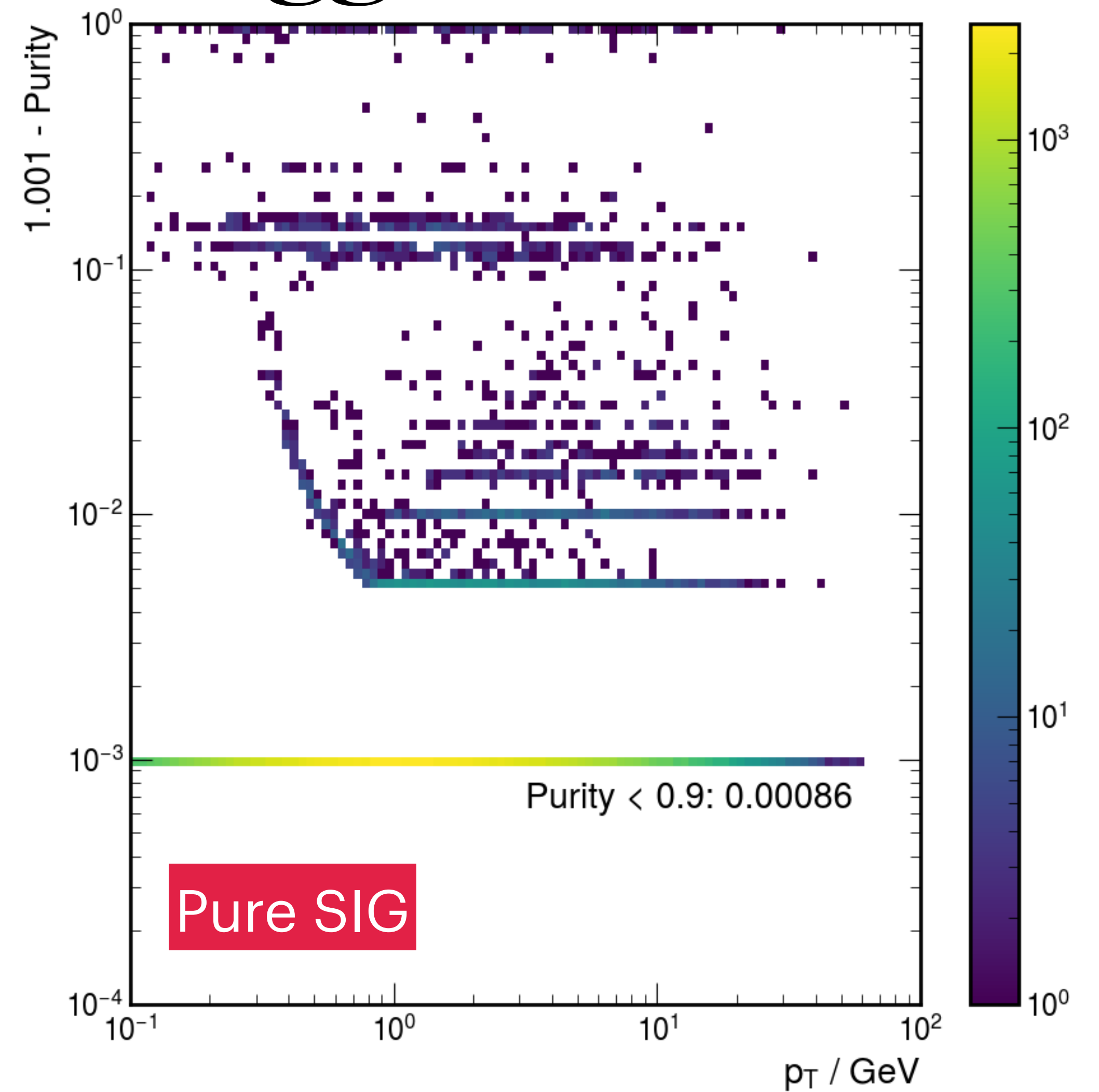
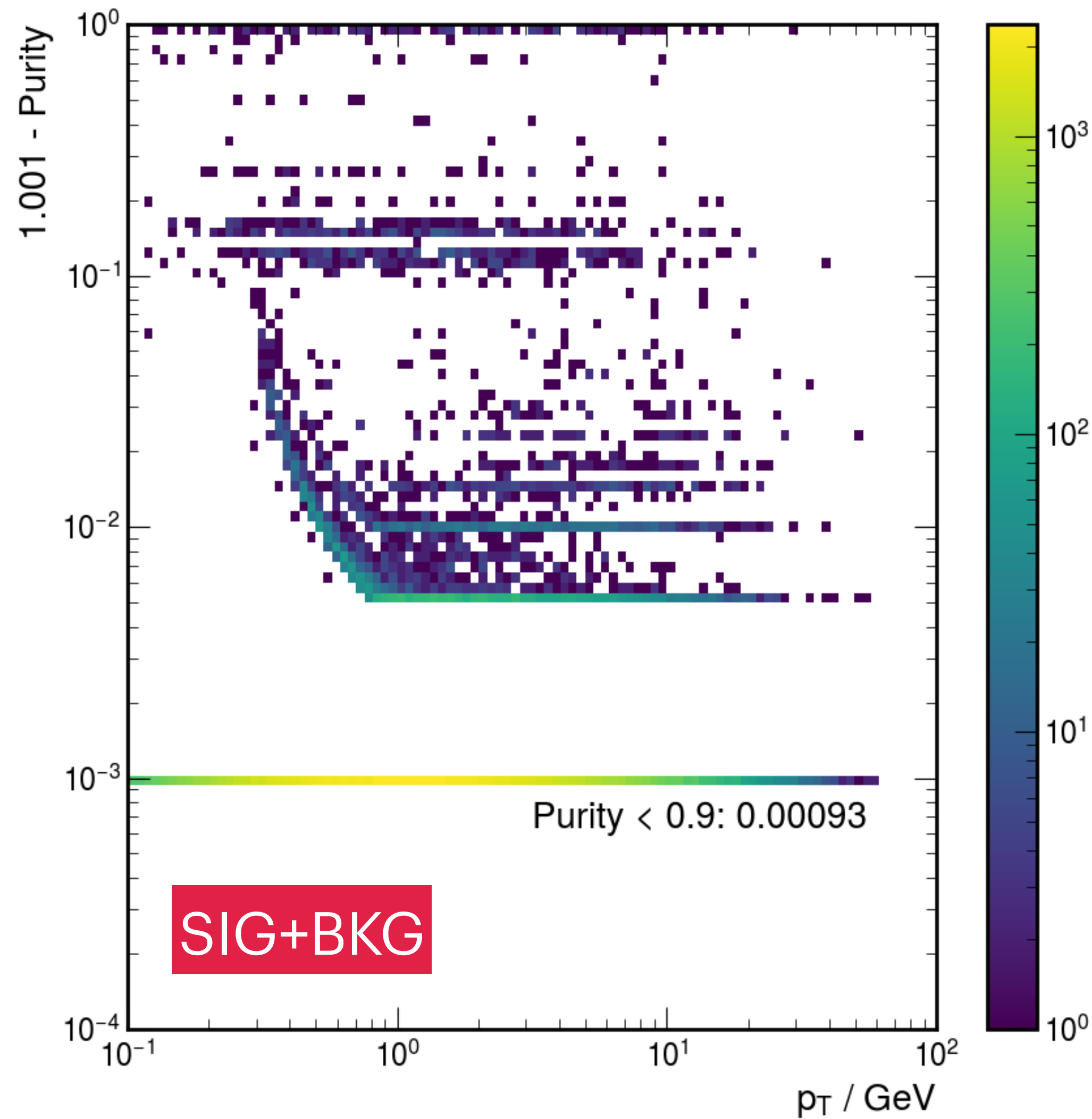
- The same signal events and the same code for pure signal (right) and sig+bkg (left)
- Different digitization

Definition of Trk Hit Purity

- Thanks to recent contributions to CEPCSW, beam background mixing is becoming available
- Track purity
 - Weight: Number of hits shared between a track and an MC particle
 - Purity: $\text{Max-weight} / \text{N-trackhits}$
- Fake rate
 - Apply a cut on track purity results in track fake rate
- All performance need to be re-evaluated with beam-brackground
- Electronic noise will be also studied at this stage



Trk Hit Purity (nnHgg)



- The same signal events and the same code for pure signal (right) and sig+bkg (left)
- Different digitisation

Todo

- The impact of beam-background at track-level is negligible
- Move to event-level
 - 20~30% mixed-events carry one or more pure bkg-tracks