Minimum-bias events

pythia8.3 ($p + p$, $\sqrt{s} = 27$ GeV, SoftQCD=on)

Averaged multiplicities: $\langle n_{\mathrm{ch}} \rangle = 9.5$, $\langle n_0 \rangle = 9.6$

Fairly fast: < 1 msec/event

Minimum-bias events

Averaged multiplicities: $\langle n_{\mathrm{ch}} \rangle = 9.5$, $\langle n_0 \rangle = 9.6$

Selection criteria: at least one track with $p_\perp > p_{\mathrm{thr}}$ and $\Theta > 0.5$

p_{thr}, GeV/c	acceptance	$\langle n_{\mathrm{ch}} \rangle$ (in barrel)	$\langle n_0 \rangle$ (in barrel)
0.2	0.69	5.4	3.3
0.5	0.57	2.7	1.0
1.0	0.17	1.4	0.2

Channels:
$J/\Psi \to \mu^+\mu^-$
$J/\Psi \to \pi^+\pi^-\mu^+\mu^-$
$D^+ \to K^-\pi^+\pi^-$
$D \to 2$ (or 3) charged mesons
calibration processes

TODO:

- Simple model of the magnetic field (uniform, solenoidal, $B = 1$ T)
- Naive hits
- Plots:
  (η, φ)
  (Θ, φ)