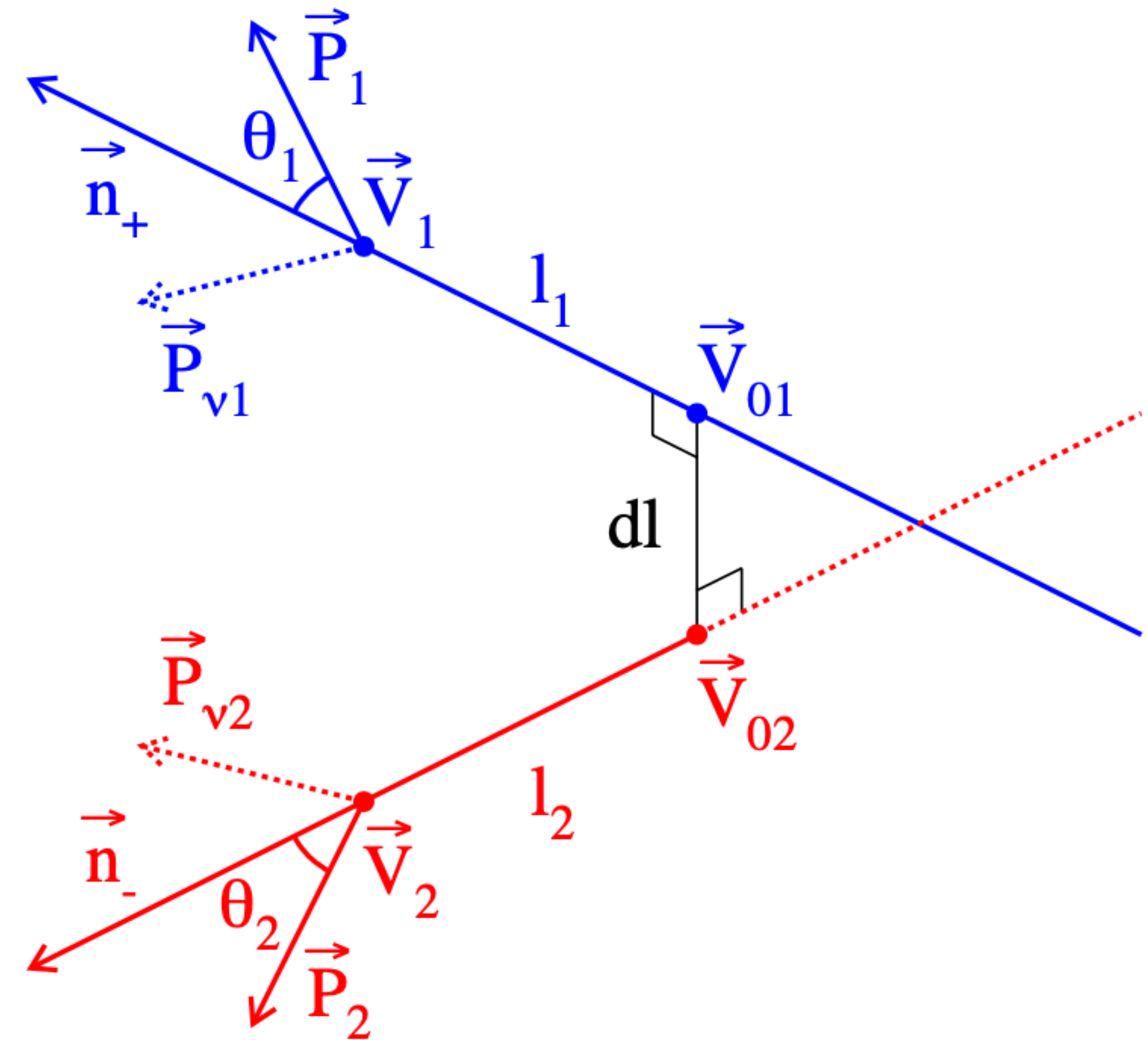


Lifetime of tau-lepton (3x3)

2022/11/25

3x3 topology

- Decay vertex of tau is clear.
- Extrapolate back the flight lines.
- IP is not needed, sys avoided.



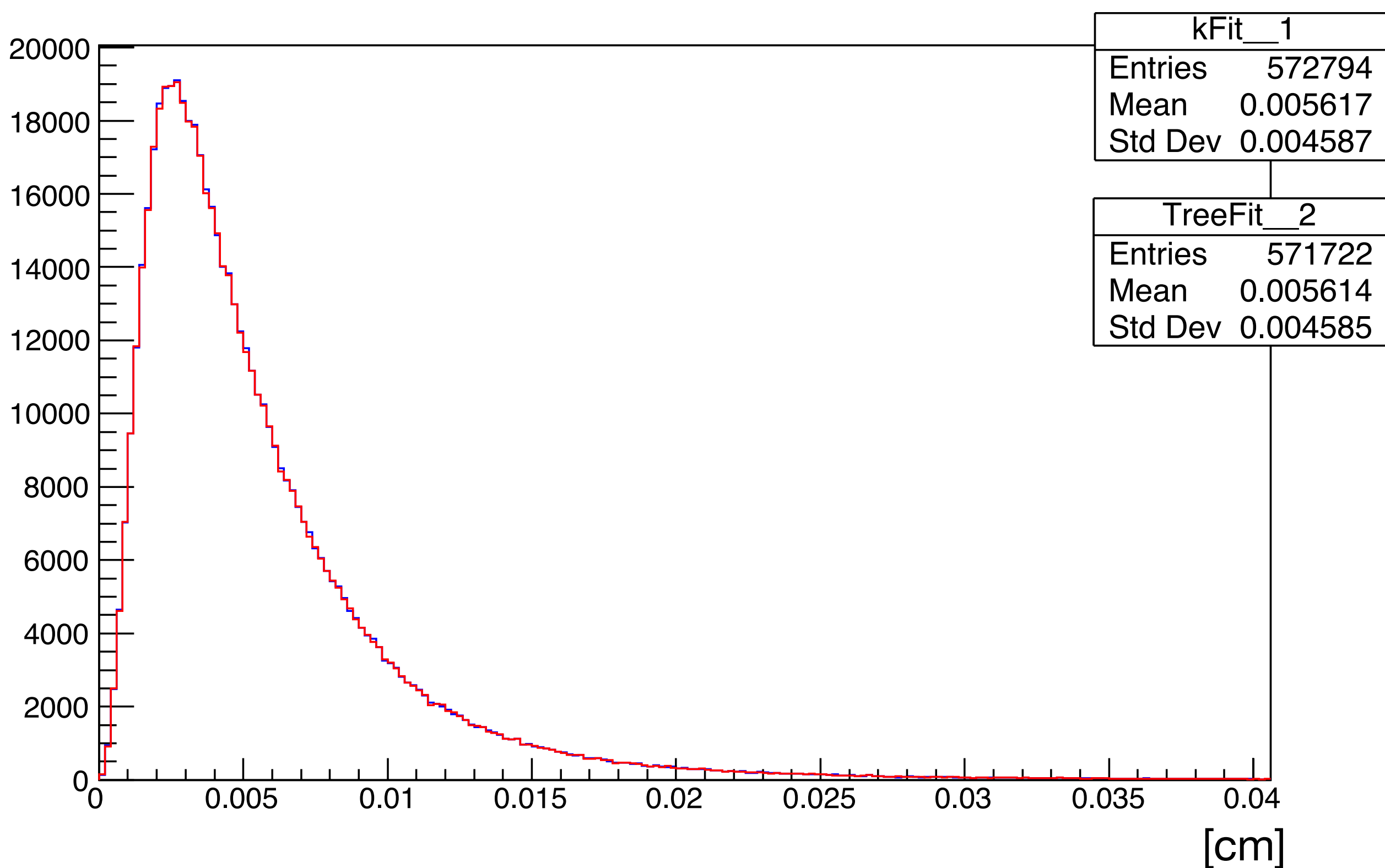
Lifetime of tau-lepton using 3x3 @ Belle II

Room of refinement, given a 40%-only statistics

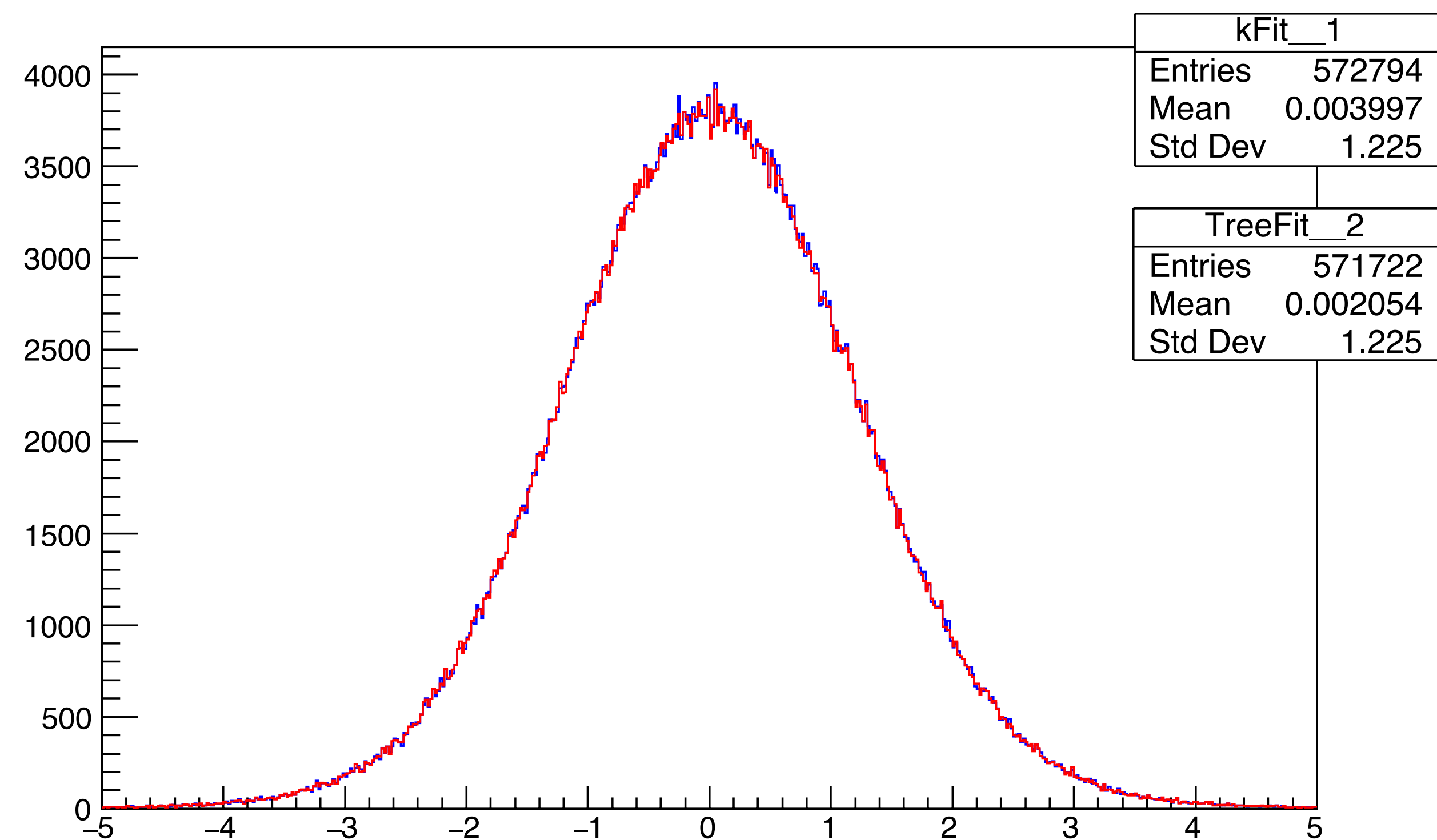
- Better vertex resolution
- Two-fold ambiguity
- Updated 3-pion generator
- Resolution functions

Difference btw fitted vertex and mc_vertex

$$\sqrt{(x_{fit} - x_{mc})^2 + (y_{fit} - y_{mc})^2 + (z_{fit} - z_{mc})^2}$$



$$(z_{fit} - z_{mc})/\sigma_z$$



- kFit and treeFit show identical performance on the vertex. (chiProb>0.001)