

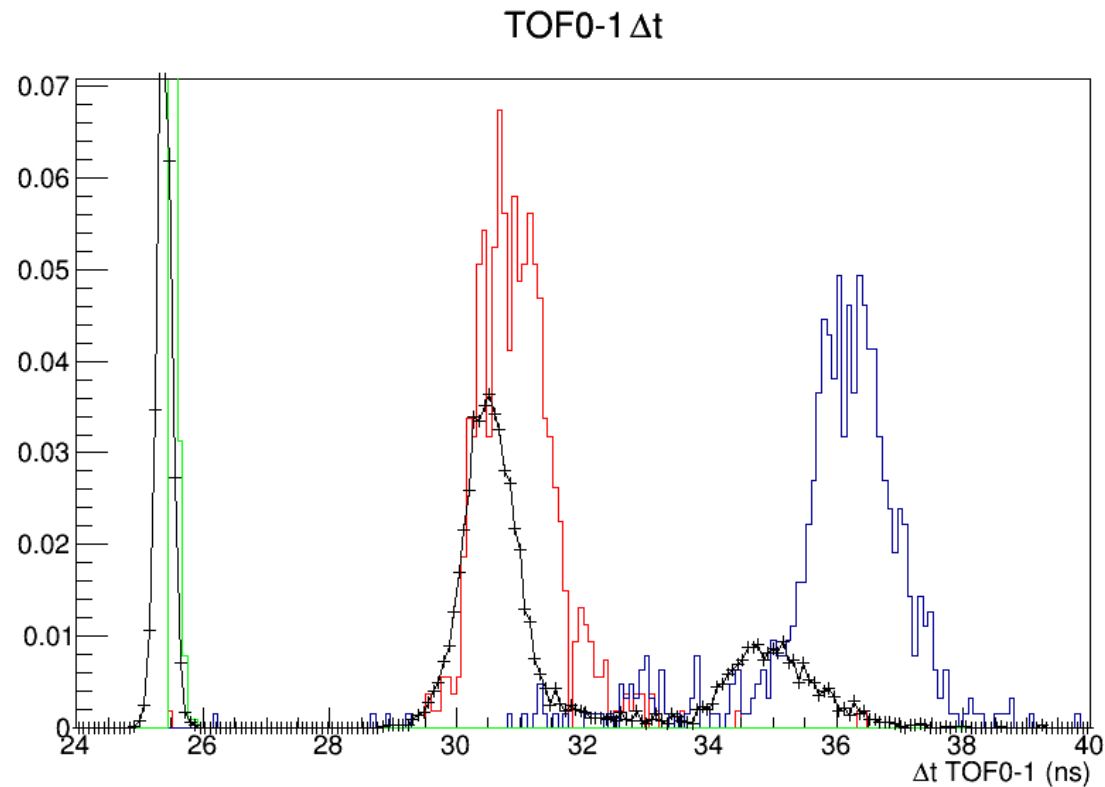
Positrons in G4BL

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13th April 2017

DeltaT: data vs G4BL MC

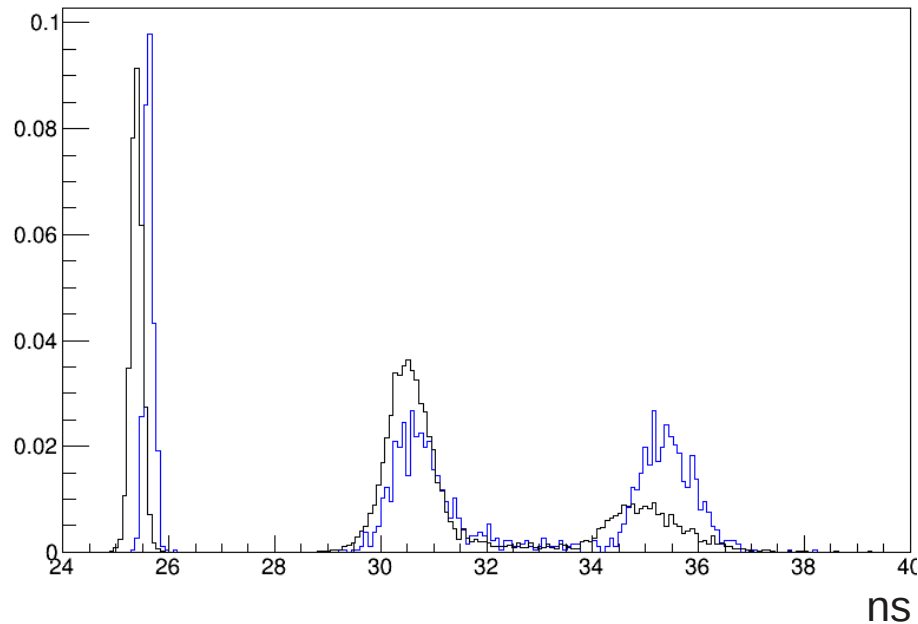
Run 9180, 3-140 MeV/c (MAUS 2.8.2):



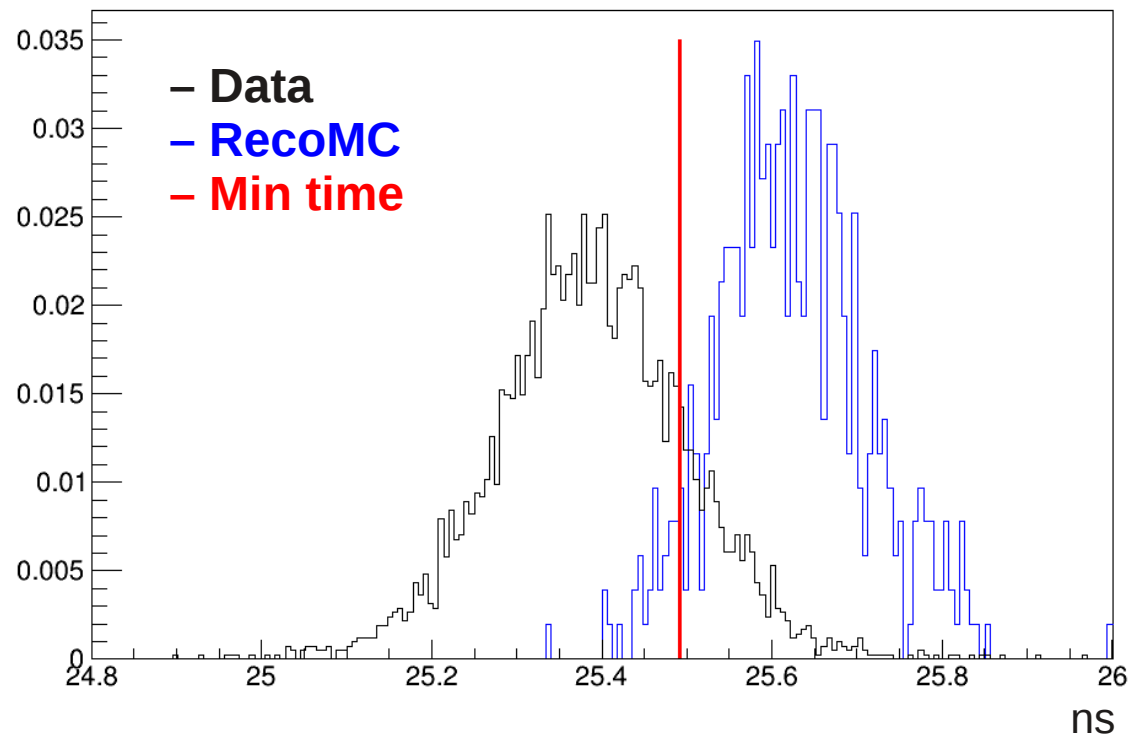
- Wrong position
- Wrong yields

MAUS Reco MC vs Data

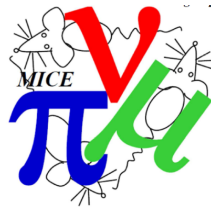
Delta t TOF0-TOF1



Delta t TOF0-TOF1

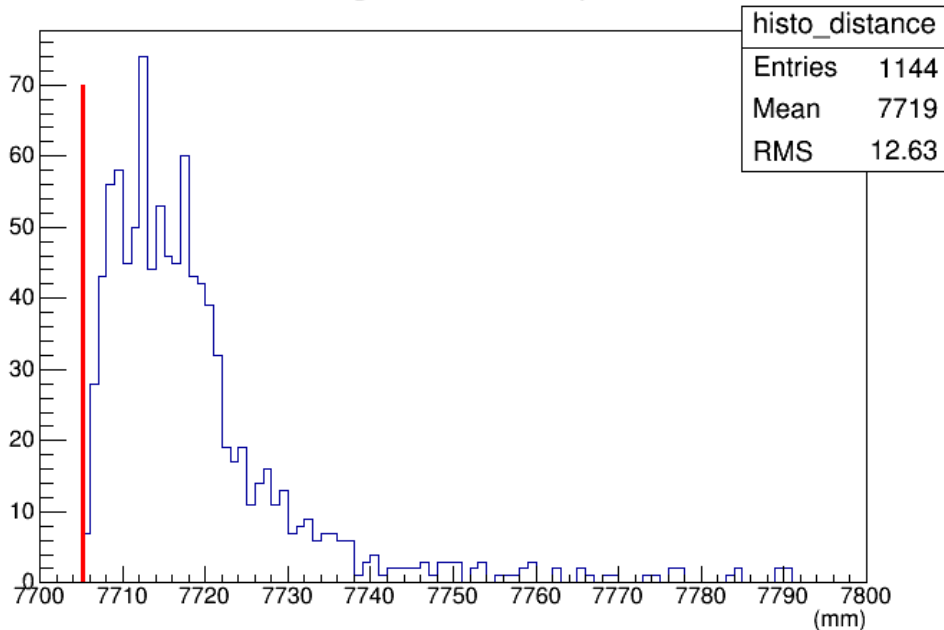


- Minimum time = 25.49 ns → the **MC** is correct
- **Data** peak distance = 0.23 ns → 69 mm
- Since the TOFs calibration uses the distance, is the data is underestimating the path length?

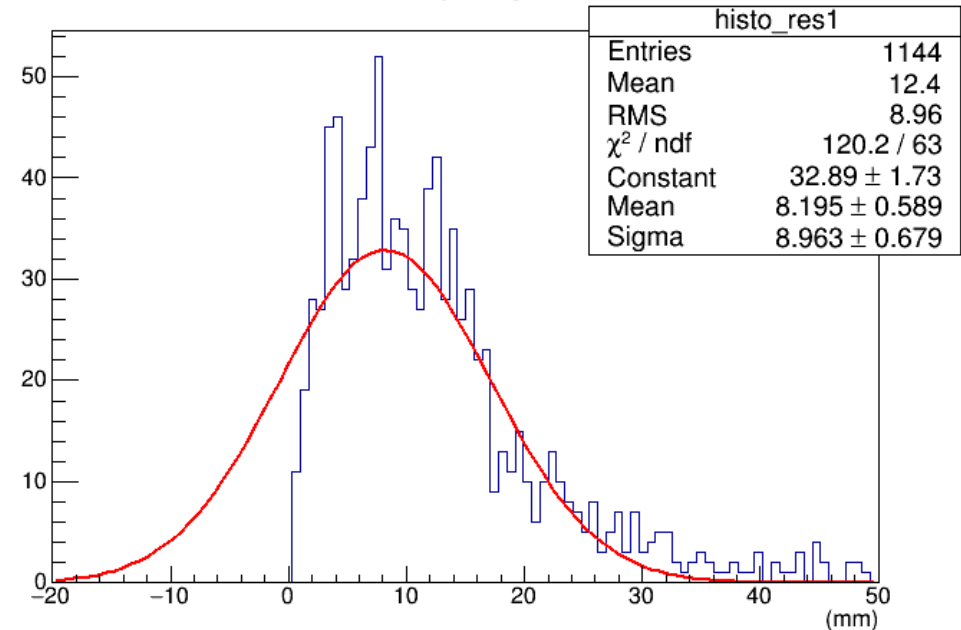


G4BL MC between TOF0 and TOF1

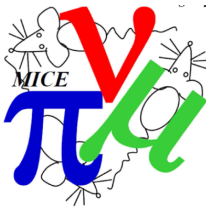
Path length from virtual planes



Discrepancy VP

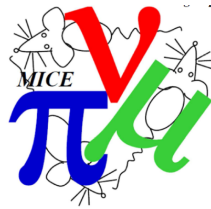


- Real path length of positrons is only ~8mm longer than the geometrical distance (7705 mm)
- To be verified with MAUS (PathLength is not filled)



Summary

- Something wrong in the calibration/geometry?
- Use the MC path length to calibrate the TOFs?
- Check a run with Q7/8/9/ off in order to “measure” the real path length (second order effect)



Maus_Information.gdml

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