



Status of ORCA4 Data Analysis (KM3MeT Tier-2@TSU)



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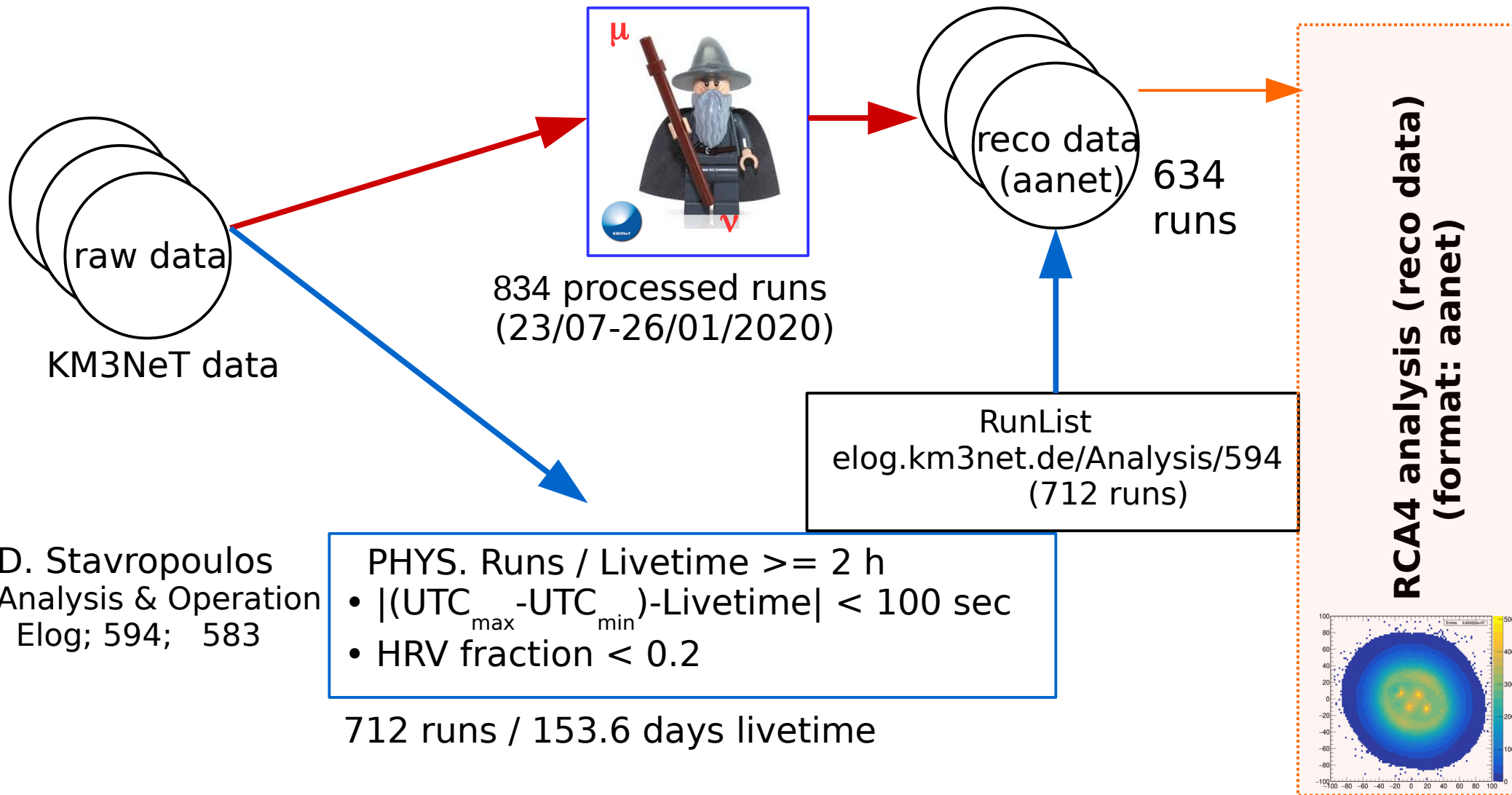
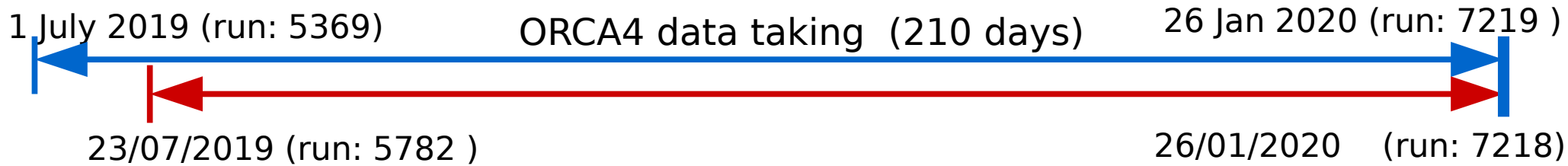
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Introduction

- ORCA4 Processed data selection
- Distributions from all statistics
- Data/MC comparison
- Ambiguity in track reconstruction
- Sparking DOMs

KM3NeT/ORCA4 Processed Data

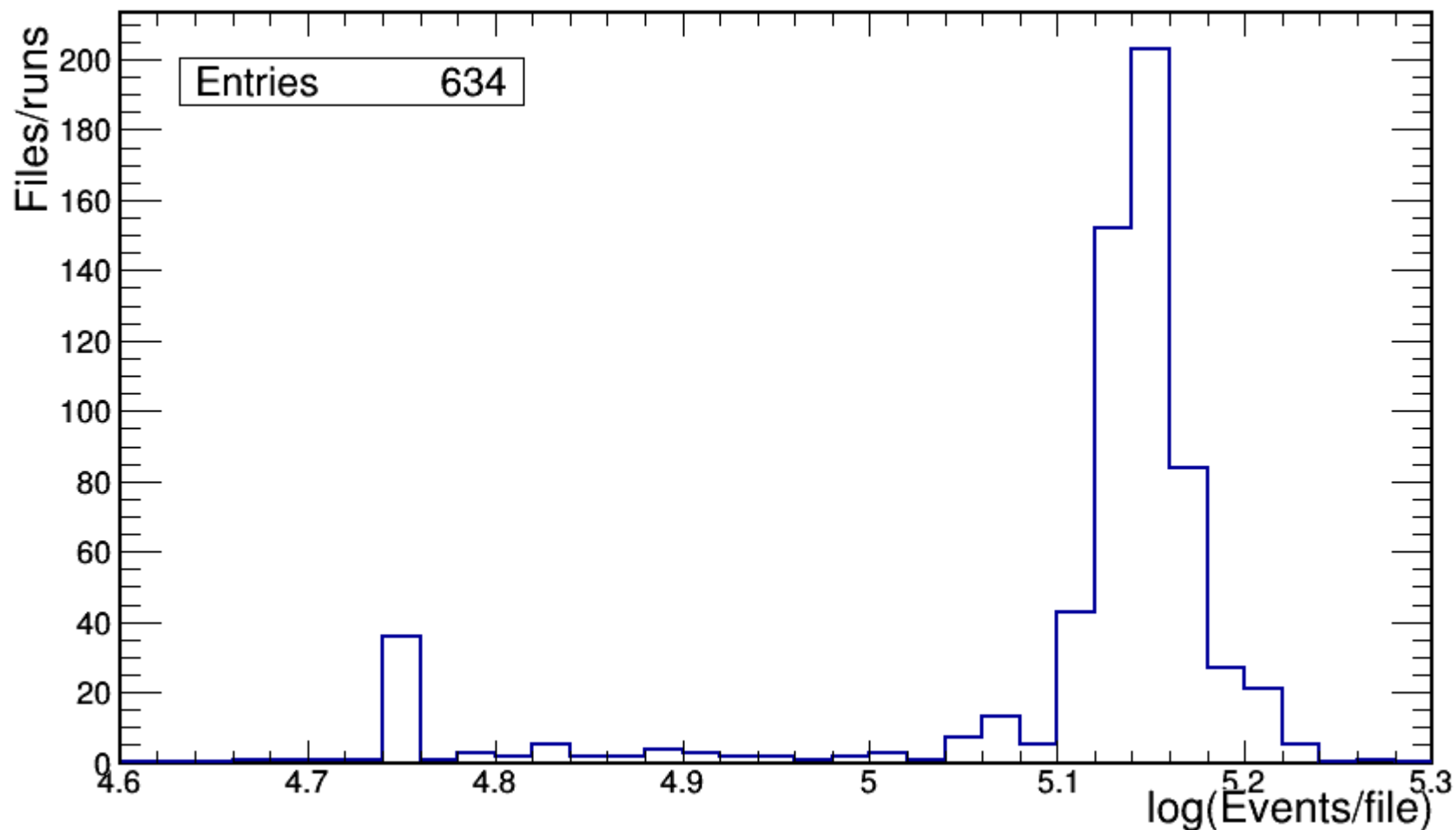


ORCA4 Data Sample

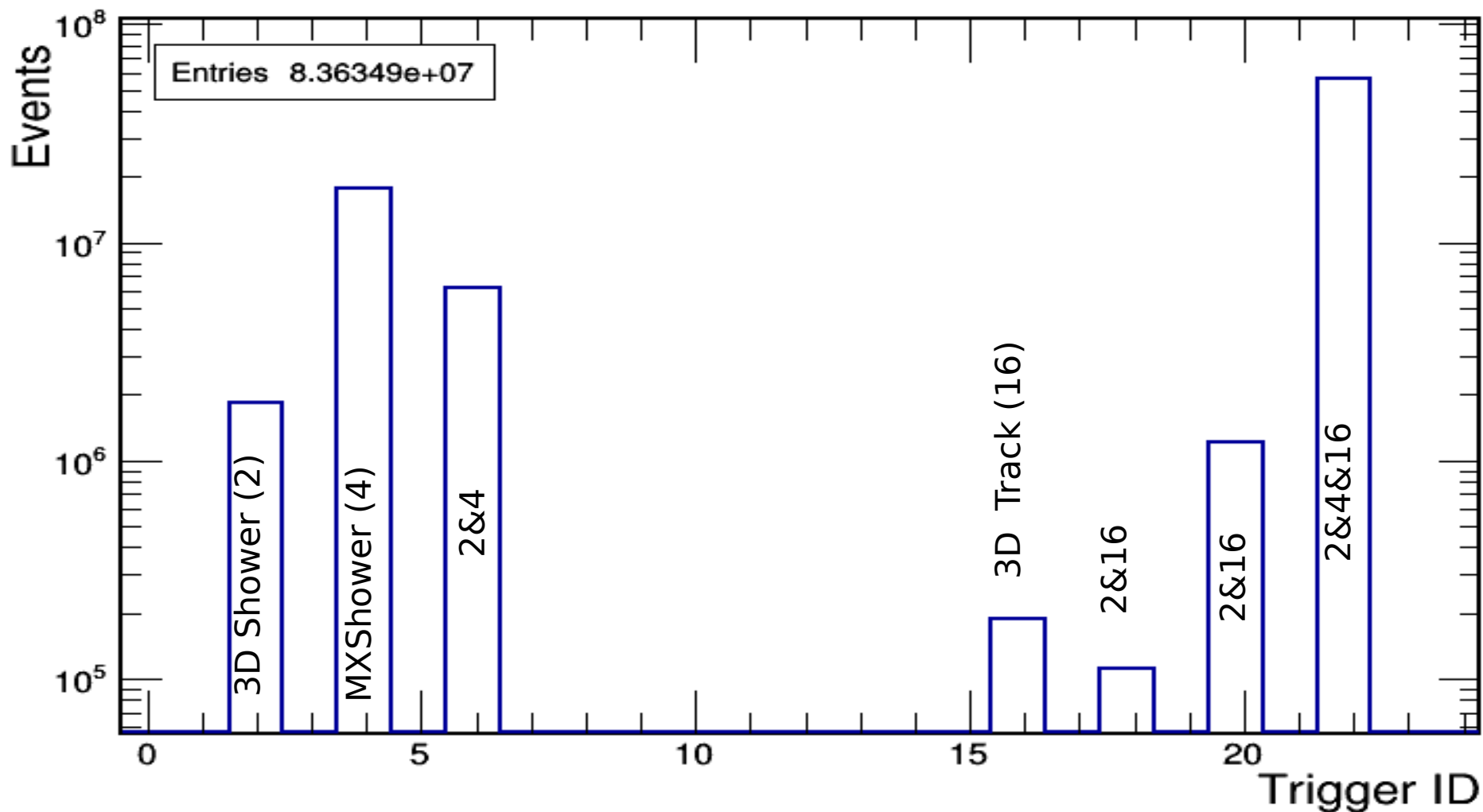
KM3NeT-Tier2 server at TSU:

ORCA4 processed data: 634 data files (aanet-format)

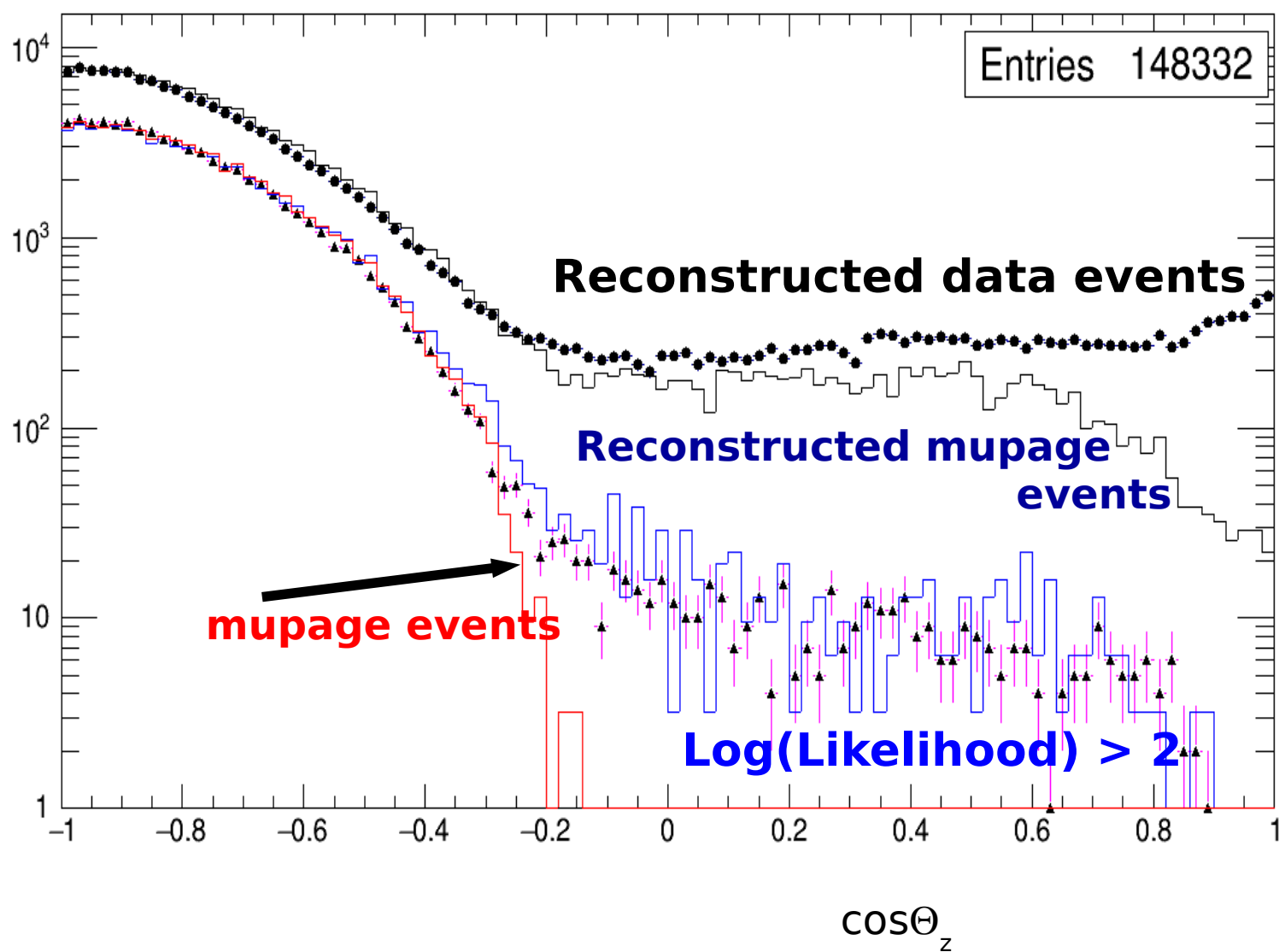
All processed/reconstructed events: 83 634 895 (8.4×10^7 events)



KM3NeT/ORCA4 Data: Processed Triggers



KM3NeT/ORCA4 Data/MC: Reconstruction Quality

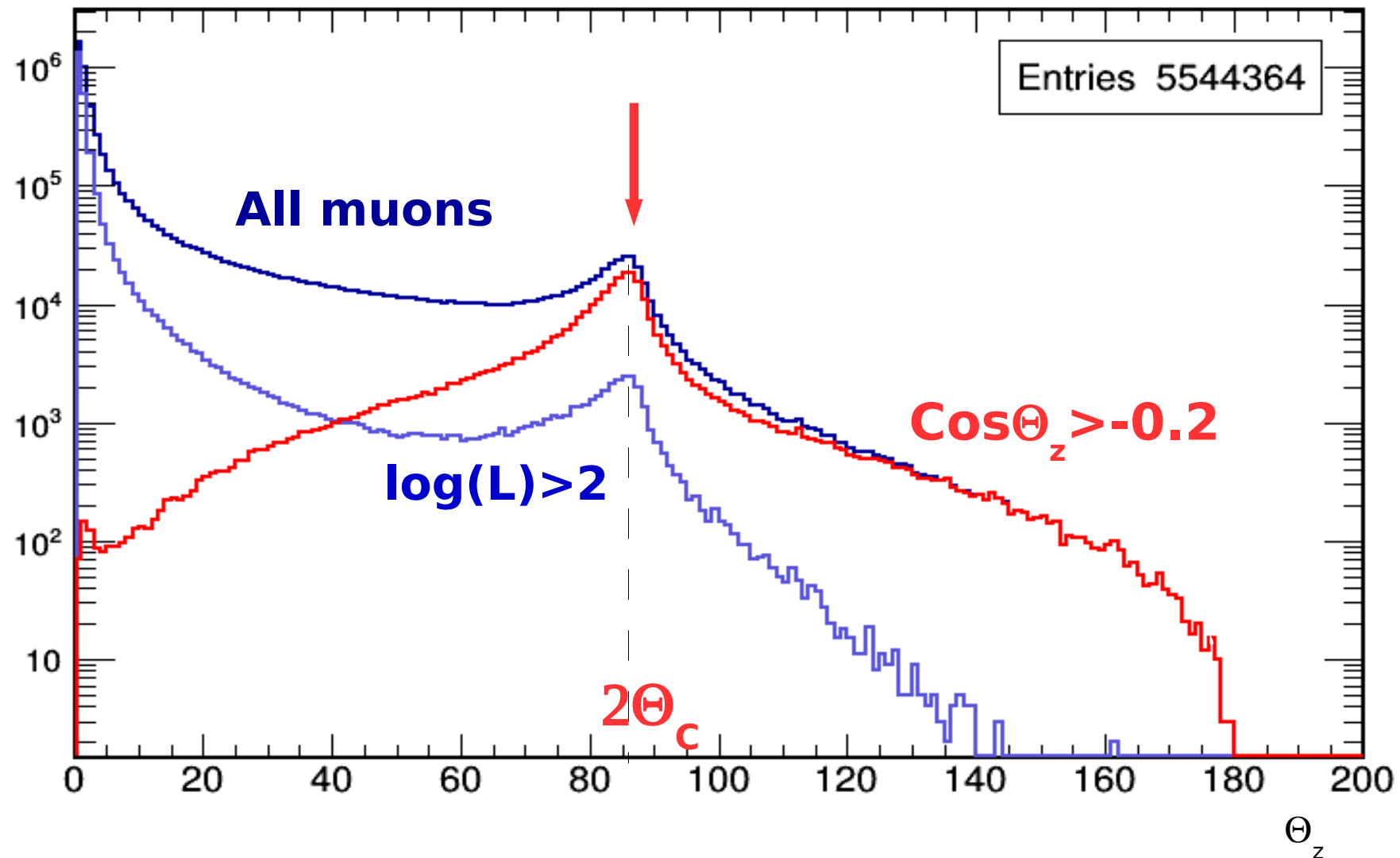


Comparison of data and atm- μ events

Example for run: 5886

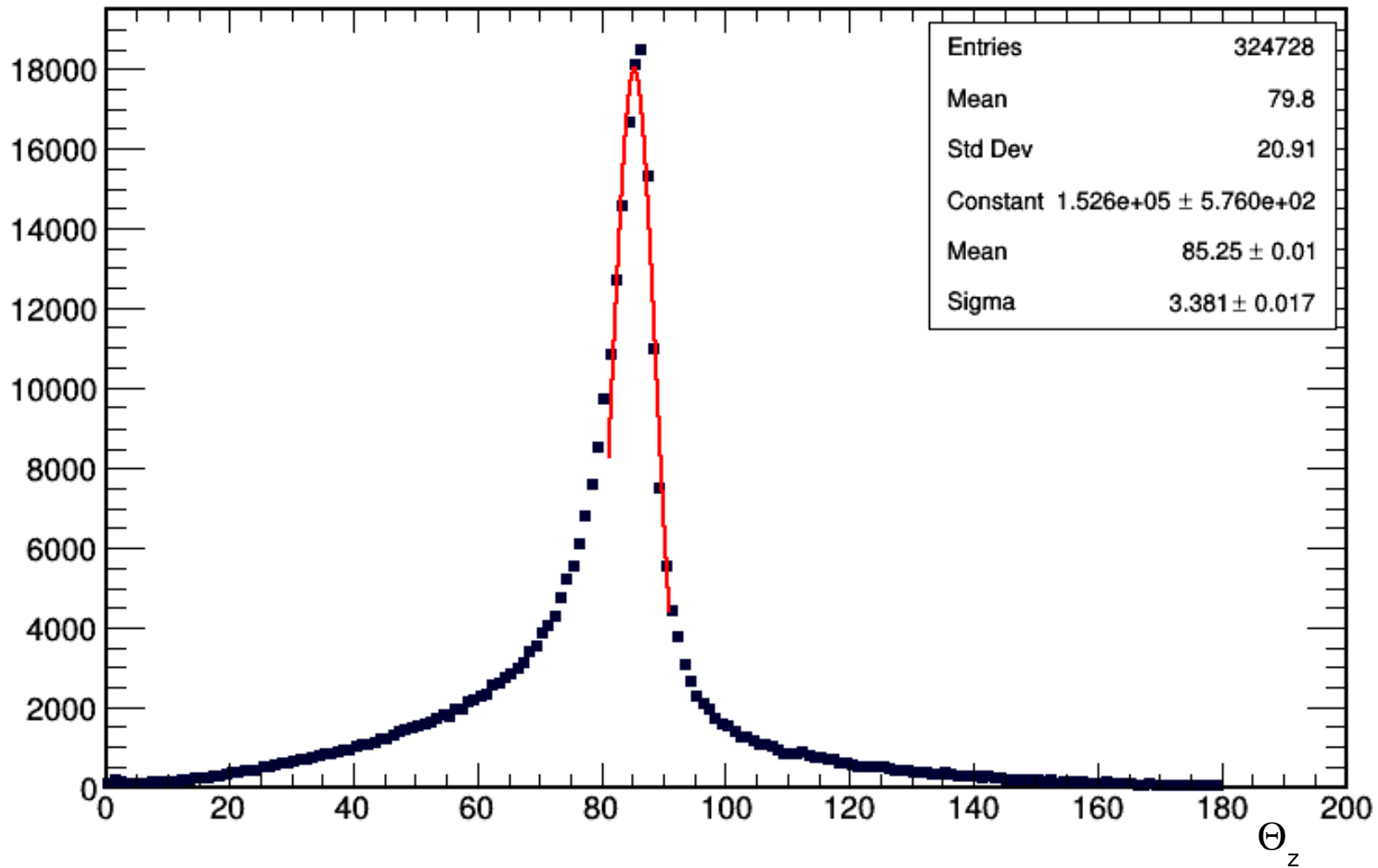
Atmospheric Muons: Angular Resolution

374 mupage-km3 files (rbr - background)
5 544 930 MC events

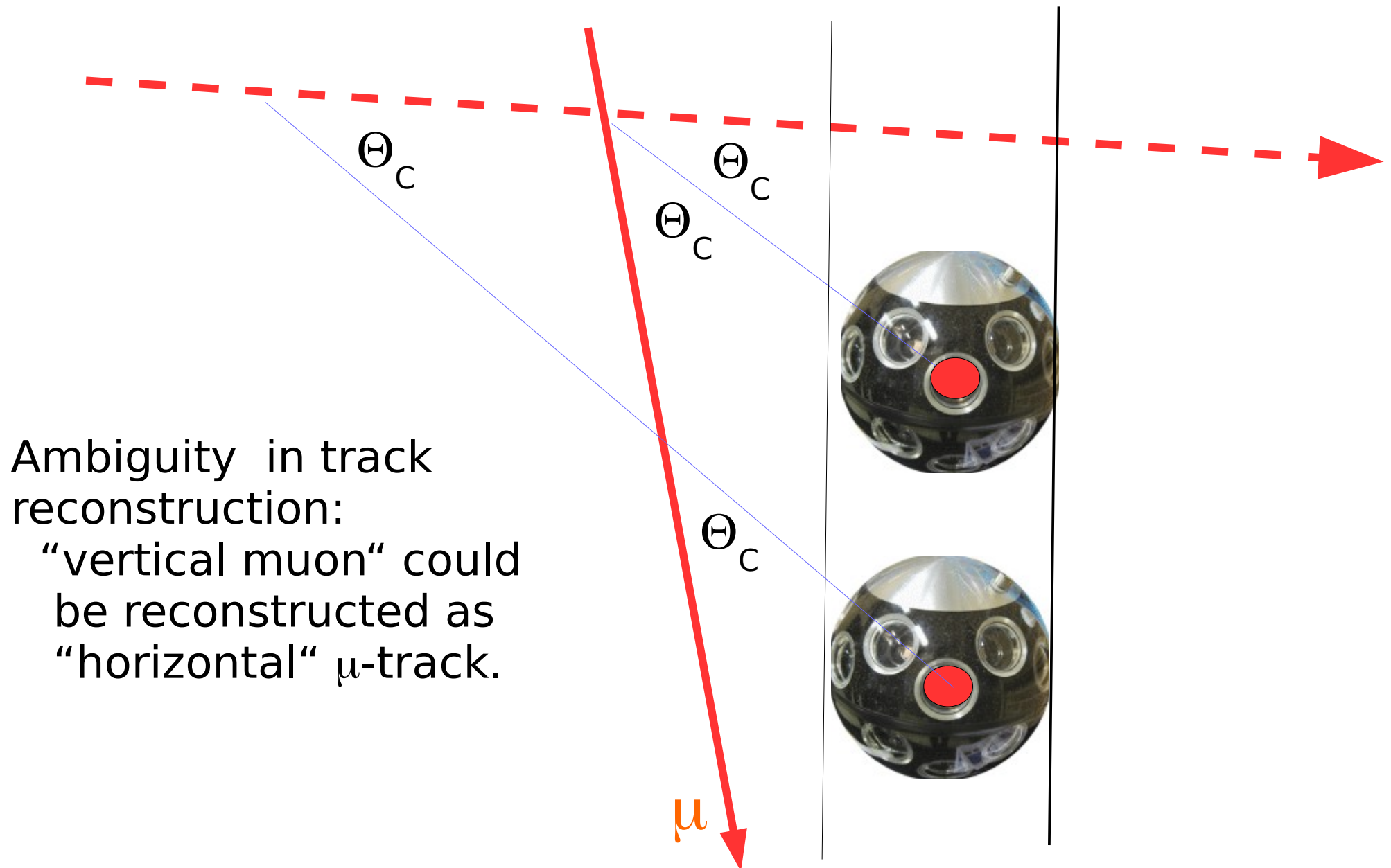


Angular Resolution

374 mupage-km3 files (rbr - background)
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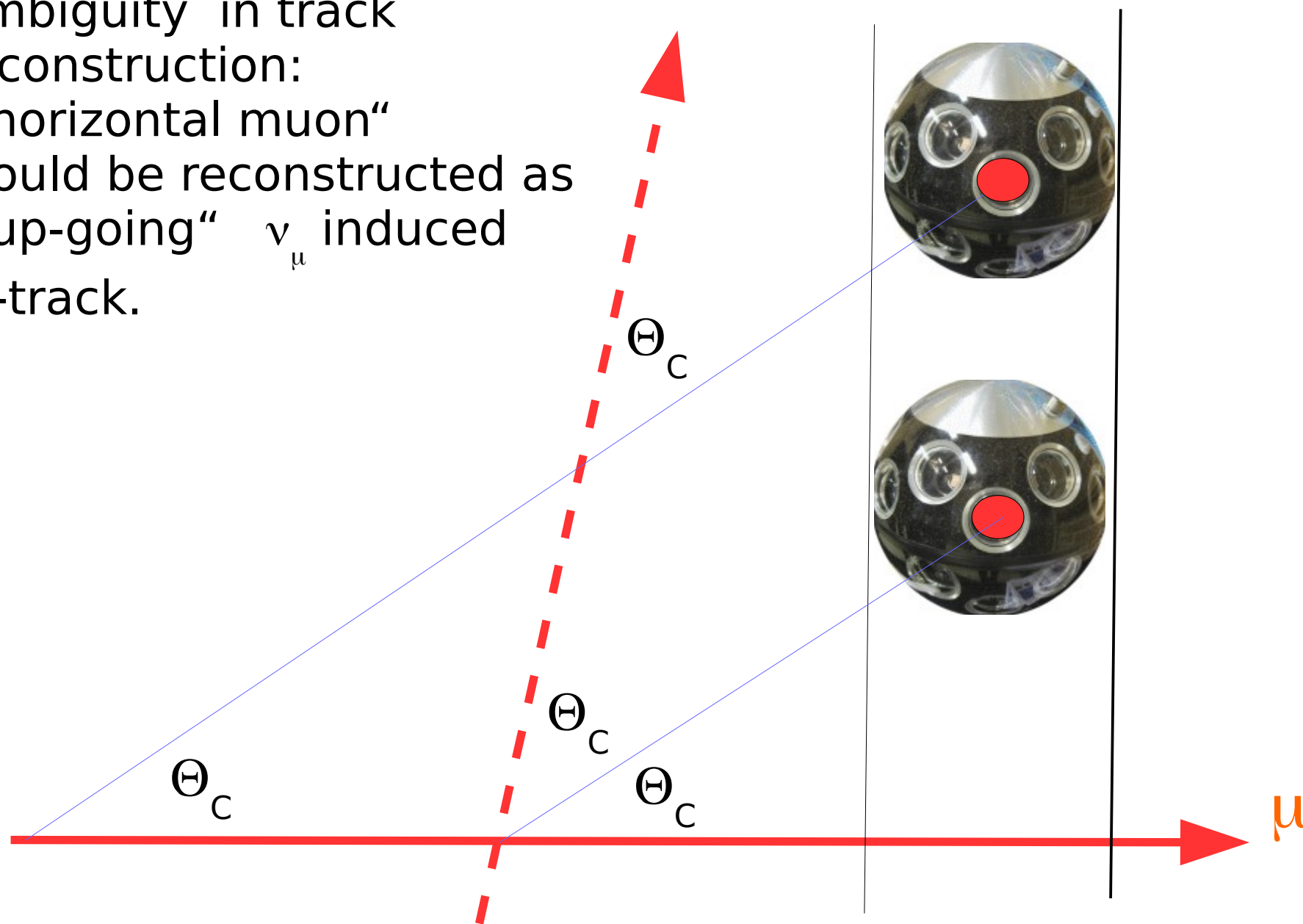


Reconstruction Ambiguity



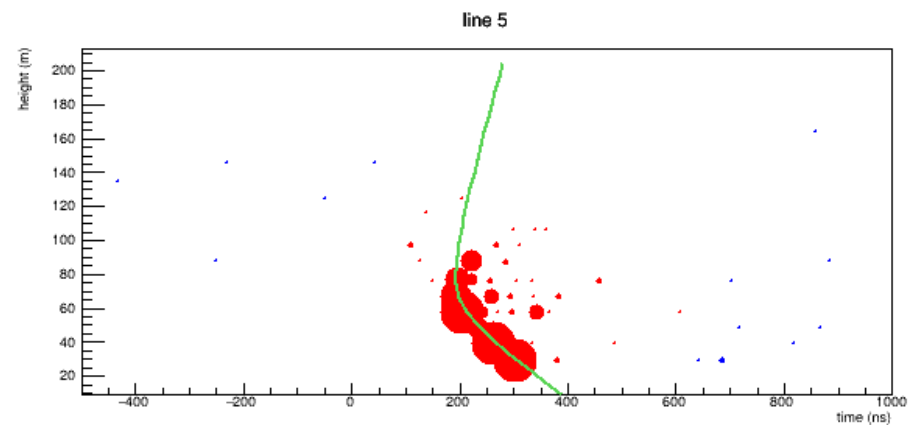
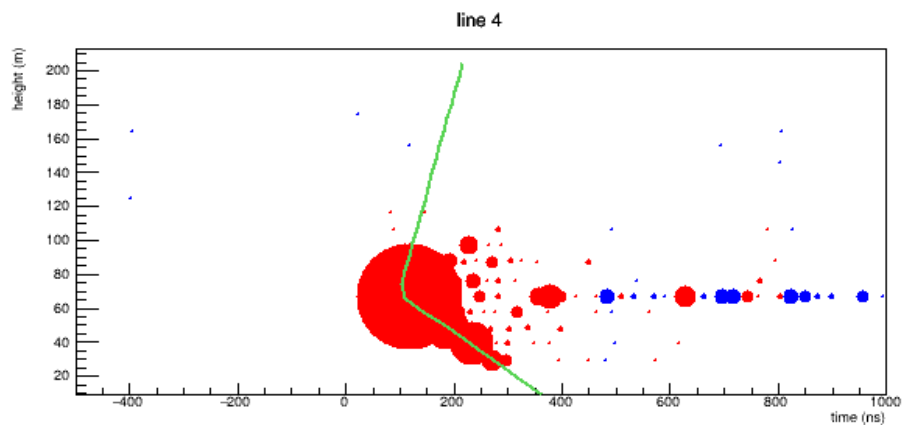
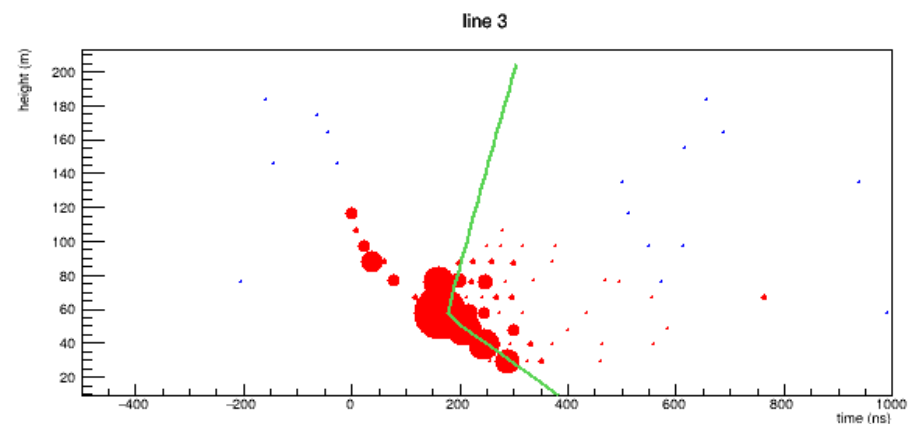
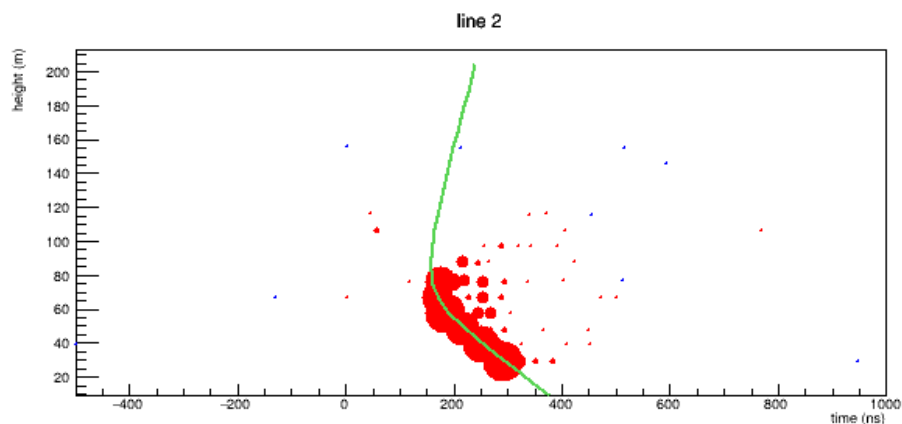
Reconstruction Ambiguity

Ambiguity in track reconstruction:
“horizontal muon”
could be reconstructed as
“up-going” ν_μ induced
 μ -track.



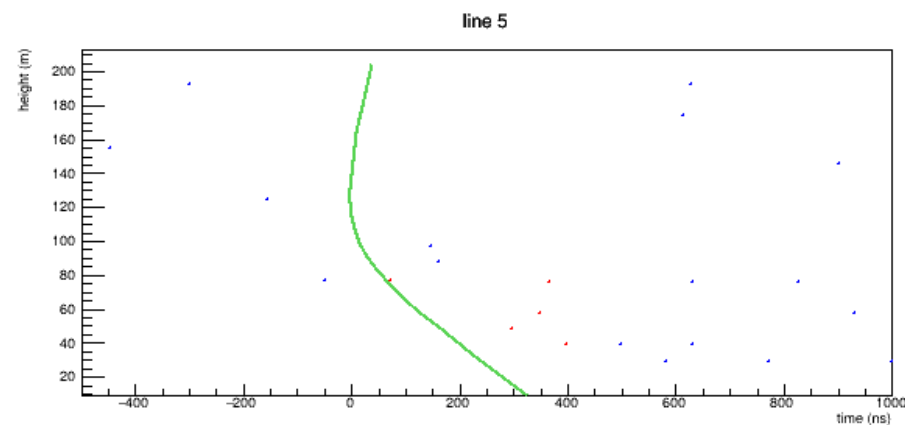
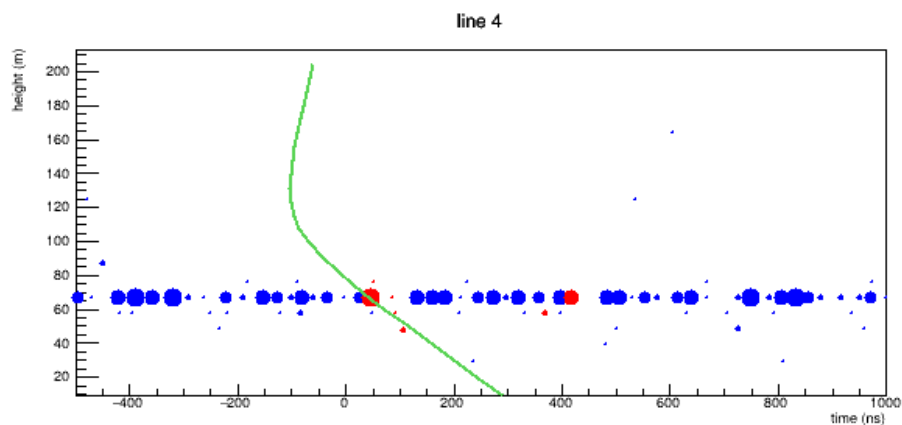
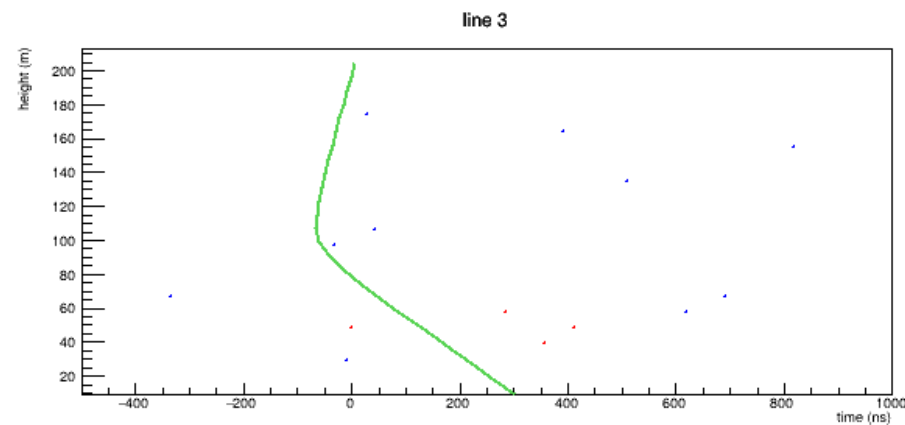
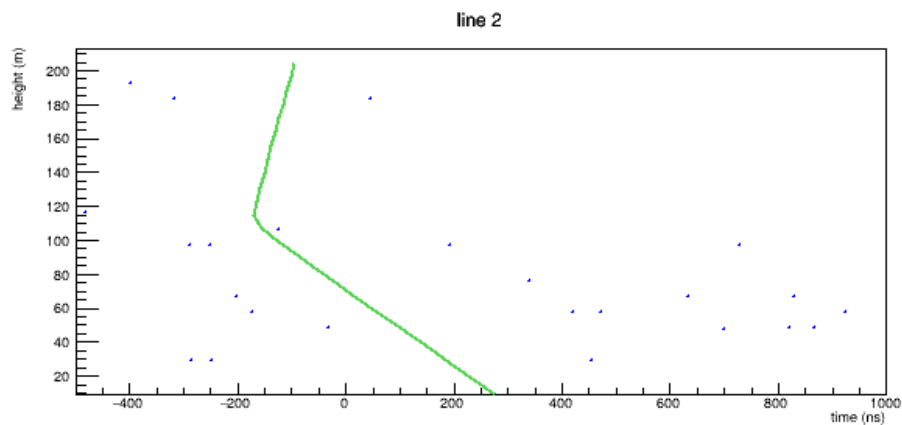
Firs Looks at the Sparking DOMs (?)

Evt: id=30 run_id=5820 #hits=783 #mc_hits=0 #trks=126 #mc_trks=0



Firs Looks at the Sparking DOMs (?)

Evt: id=31 run_id=5820 #hits=336 #mc_hits=0 #trks=128 #mc_trks=0



Status of ORCA4 data analysis on KM3NeT Tier-2 TSU:

- All processed “good” runs/events from ORCA4 processing are available for KM3NeT Tier-2 station at TSU
- All processed events: 83 634 895 (8.4×10^7 events)
- Currently – analysing ORC4 data and MC:
sample of muon and neutrino tracks like events
- Currently – First steps at the study of the „Sparking DOMs“