

250 GeV test production Muon samples.

Software & Analysis meeting

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DESY

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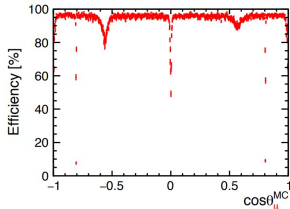
HELMHOLTZ
RESEARCH FOR GRAND CHALLENGES



Test production - muon samples

Overview

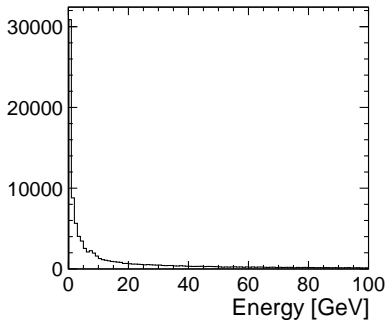
- Muon sample:
rv02-01.sv02-01.mILD_I5_o1_v02_nobg.E1-calib.l110082.Ps_pm13_prnd.e0.p0.n001.d_dstm_14703_0.slcio
- Uniform distribution in $\cos\theta$
- Checking whether muon ID issue is properly fixed (plot on right)
→ see Github [iLCSoft/ILDConfig#88](#)
- Applied different cuts on PFO energy (see next slides)
- Pure muon ID:
 - Denominator: 1 charged PFO only
 - Numerator: PFO identified as muon



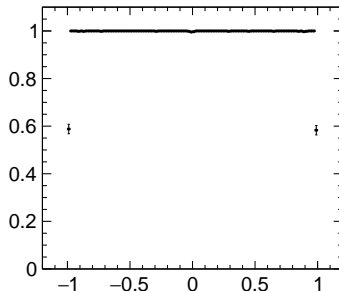
Test production - muon samples

Charged PFO efficiency

Pfo energy total



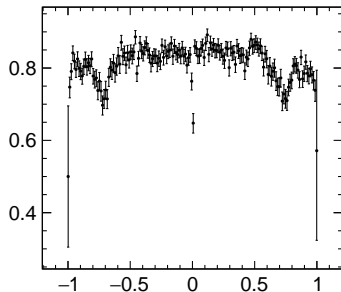
Charged PFO efficiency, $E > 1$ GeV



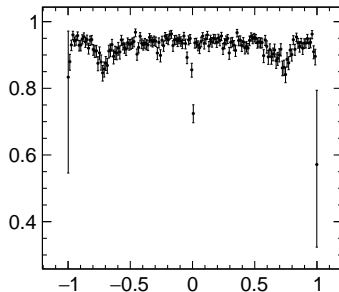
Test production - muon samples

Pure muon ID efficiency

Muon efficiency, $E > 1$ GeV



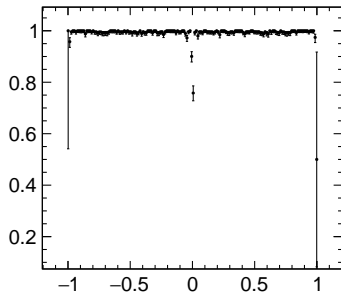
Muon efficiency, $E > 2$ GeV



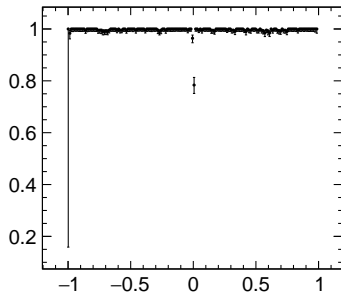
Test production - muon samples

Pure muon ID efficiency

Muon efficiency, $E > 5$ GeV



Muon efficiency, $E > 10$ GeV



Test production - muon samples

Conclusion

- Muon sample of test production checked
- Old muon issue fixed in v02-01
- Issue not re-observed in new samples

