

Odd Tracks

Introduction

An apparent anomaly in the high-pT differential cross section at CDF (see references) has generated some interest in possible sources of "odd tracks" at the LHC.

Signatures

The various signatures for odd tracks consist of a few basic elements.

- kinks
- stubs
- intermittent hits
- anomalous curvature
- anomalous timing and/or dE/dx

However, some of these (kinks, anomalous curvature) could manifest in much simpler variables such as pT and could therefore be observable in inclusive measurements of differential cross section.

Data Samples

- min-bias?
- missing ET ("no mu")
- Data/MC at SLAC: /u/at/ahaas/nfs3/katie
- Data/MC at CERN: /u1/data/user.cmalone.data11_7TeV.00178109.physics_MinBias.merge.AOD.f351_m765/?(Data) /u1/data/data10_7TeV.00152166.physics_MinBias.merge.NTUP_TRKVALID.r2045/(Data) /u1/data/user.cmalone.mc10_7TeV.105001.pythia_minbias.recon.AOD.e577_s1024_s946_r1926_tid215649_00/(MC)

Tools

- AMI: <https://ami.in2p3.fr/AMI/servlet/net.hep.atlas.Database.Bookkeeping.AMI.Servlet.Command?Converter=/AMIXmlToAMIProdHtml.xml&Command=FormBrowseDatasetPerRun+-runNumber=178109>
- ATLAS Data Summary: <https://atlas.web.cern.ch/Atlas/GROUPS/DATAPREPARATION/DataSummary/2011/>
- ATLAS Run Query: <http://atlas-runquery.cern.ch/query.py?q=find+run+178109+and+ready+%2F+show+all>
- ATLAS Computing Workbook: <https://twiki.cern.ch/twiki/bin/view/Atlas/WorkBook>
- ATLAS Physics Workbook: <https://twiki.cern.ch/twiki/bin/view/AtlasProtected/PhysicsAnalysisWorkBook>

References

- [Odd Tracks at Hadron Colliders](#)
- [Measurement of Particle Production and Inclusive Differential Cross Sections in \$p\bar{p}\$ Collisions at \$\sqrt{s}=1.96\$ TeV](#)
- [Erratum: Measurement of particle production and inclusive differential cross sections in \$pp\$ collisions at \$\sqrt{s}=1.96\$ TeV](#)
- [PRELIMINARY: Unusual Energy Deposition, Timing, and Tracks.pdf](#)

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