

Progress Report

Auger US Analysis meeting
October 2013

CWRU
Danielle LaHurd

Collider experiment literature search

- Work with Glennys Farrar and Jeff Allen
 - Over Summer 2013
- Take information from collider experiments relating to CRs
 - Cross section
 - Elasticity
 - Multiplicity
 - π fraction
 - etc.

Collider experiment literature search

- 100s of papers read
- Information in energy range 0 - 7 TeV
 - RHIC (up to 200GeV, p+p, p+A)
 - LHC(up to 14TeV, p+p, p+A)
 - SHINE/NA61 (up to 158 GeV, p+C, π^+ +C)
 - etc.
- Collection of information in future GAP note/paper

arXiv:1209.3553v	arXiv:0901.0872v1	arXiv:1004.3034v2
arXiv:1111.7080v1	arXiv:1209.2803	arXiv:0911.5430v2
arXiv: 1208.4968v1	NIM A499 469-479 (2003)	arXiv:1101.4110v3
arXiv: 1206.5160v2	arXiv: 1001.3674v1	arXiv:1012.3257v2
arXiv:1012.2604v1	arXiv:1209.2803	
arXiv:1102.0983v3	PHYSICAL REVIEW C 83, 024913 (2011)	
arXiv:1112.0150v1	PhysRevLett.102.142301 (2009)	
arXiv:1305.5281v1	PhysRevC.74.021901 (2006)	
arXiv:1303.5671	PhysRevC.72.031901 (2005)	
arXiv:1001.1699	PhysRevC.71.021901 (2005)	
hep-ex/0510009v1	arXiv:1104.0326v1	
arXiv:1004.1889	arXiv: 1012.5104v2	
arXiv:0904.2708	arXiv:1307.3442v1	
http://spshadrons.web.cern.ch/spshadrons/	arXiv: 1102.4282v2	
arXiv:1207.6520v3	arXiv: 1011.5531v1	
NA61/NA49 Collaboration meeting in Belgrade (May 27, 2013)	arXiv: 1205.3142v1	
NA61/NA49 Collaboration meeting in Belgrade (May 27, 2013)	arXiv: 1302.2394v2	
DOI:10.5506/APhysPolBSupp.6.419	arXiv:1209.2803	
EPS-HEP2011_087	arXiv:nucl-ex/0206008	
	arXiv:0808.2014	
	arXiv:0602011v2	
	arXiv: 1305.6131v3	
	arXiv: 1305.6131v3	
	arXiv: 1305.6131v3	

Exotics/Hadronic Interaction Project

- Started talks with Tanguy Pierog
- Search for QGP in UHECR events through simulation using multiple parameters
 - 3D simulation with CORSIKA/CONEX
 - Use simultaneous modifications
 - combined effects
 - How often for noticeable effect in Auger
 - Seen in higher multiplicity showers?
 - multiplicity effect?
- Still in preliminary phase

Cerenkov Xmax reconstruction

- From CORSIKA simulations
- See Andrew for additional details

