E891 - Search for QGP

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Physics Goals:	To study strangeness enhancement in Au-Au Collisions
Beams:	Au
Targets:	Au

Physics Summary

The e891 program is for studying Au-Au collisions at the AGS by measuring the angles and momenta of charged tracks, K's and Λ's using TPC's and trigger dectectors from E-810. In order to handle the higher track multiplicities produced by Au beams, a modified geometric arrangement of the TPC modules will be used.

This program will allow us to look for anomalous behavior in rapidity (pseudorapidity) distributions, multiplicity, strangeness enhancements, $P_{\perp}$, energy flow, possibly observe Hanbury-Brown and Twiss effects and other new phenomena. These observations will be on an event by event basis so that particularly interesting classes of events can be selected and added together to search for new effects (like strangelets) implying a QGP or other new states of matter in a manner which tends to maximize signal to background ratios.

Selected Publications

"Results from E-810 Concerning Strange Particles and Strangelet Search", R.S. Longacre *et al.*, Quark Matter '93, Proceedings Tenth International Conference on Ultra-Relativistic Nucleus-Nucleus Collisions, Borlange, Sweden, June 20-24, 1993, Eds. E. Stenlund, H-A. Gustafsson, A. Oskarsson and I. Otterlund, (North Holland, 1994) 167c-174c. Nucl. Phys. A**566** (1994) 167c-174c.

"Recent Results from E-810", K.J. Foley (for the E-810 Collaboration), Proceedings of Quark Matter 1991, Nucl. Phys. A**544** (1992) 335c-342c.

"Ξ^- Production in Heavy Ion Collisions at the AGS", S.E. Eiseman *et al.*, Phys. Lett. B**325** (1994) 322-326.

"Transverse Momentum Distributions of π^- from 14.6 $\times A$ GeV/c Silicon Ion Interactions in Copper and Gold", S. Ahmad *et al.*, Phys. Lett. B**281** (1992) 29-32.

"Rapidity Distributions and Nuclear Transparancy in Heavy Ion Collisions", S.E. Eiseman *et al.*, Phys. Lett. B**292** (1992) 10-12.

"Rapidity Distributions of K_s and Λ's Produced by 14.6 GeV/c Si and Pb Targets", S.J. Lindenbaum (for the E-810 Collaboration), paper submitted to the 26th International Conference on High Energy Physics (ICHEP 92), August 6-12, 1992, Dallas, Texas. BNL 47886.

"Rapidity Distributions of K_s^0's and Λ's Produced by 14.6 $\times A$ GeV/c Si Beams on Si and Pb Targets", S.E. Eiseman *et al.*, Phys. Lett. B**297** (1992) 44-48.

"Neutral Strange Particle Production at the AGS", A.C. Saulys (for the E-810 Collaboration), Proceedings of Heavy-Ion Physics at the AGS: HIPAGS '93 Conference, Cambridge, Massachusetts, 13-15 January 1993, Eds. G.S.F. Sjtephans, S.G. Steadman, and W.L. Kehoe, (1993) 196-203.

"Systematics of Hadronic Production from Si and Pb Targets with 14.6 $\times A$ GeV/c Si Beams", A.C. Saulys *et al.* Proceeding of the XIII Particles and Nuclei International Conference (PANIC '93), Perugia, Italy, 27 June-3 July 1993, Ed. Alessandro Pascolini, (1994) 691-694.

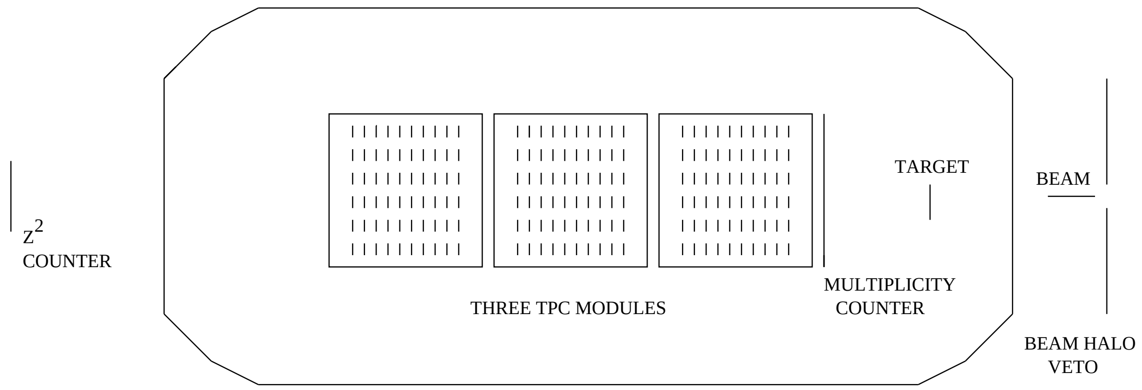

Figure 1: E-891 Plan View

Figure Details

The MPS magnet with three TPC modules, Au target and associated trigger devices.

Related Experiments

E810