WA98 - Large Acceptance Hadron and Photon Spectrometer

VECC(Calcutta)-CERN-U Panjab(Chandigarh)-U Geneva-GSI(Darmstadt)
IOP(Bhubaneswar)-JINR(Dubna)-U Rajasthan(Jaipur)-U Jammu
KVI(Groningen)-U Lund-MIT-U Münster-NPI/ASCR(Řež/Prague)
ORNL-RRC(Kurchatov Moscow)-U Tennessee-U Utrecht
Warsaw Inst. for Nucl. Studies

Spokesperson: Hans H. Gutbrod
PPE-Division, CERN, CH-1211 Geneve
E-Mail: gutbrod@vxwa80.cern.ch (internet) FAX: +41-22-782 4897

Contact Person: Laurent Rosselet
PPE-Division, CERN, CH-1211 Geneve
E-Mail: ros@cernvm.cern.ch (internet) FAX: +41-22-782 4897

Physics Goals:	Global event description and inclusive spectra
Beams:	Pb at 160 GeV/A, p at 200 GeV/A
Targets:	Pb

Physics Summary

The aim of the experiment is the high statistics study of photons, neutral hadrons and charged particles, and their correlations in Pb-Pb collisions. The photons are measured by a 10,000 module Lead Glass Spectrometer yielding high precision data on π° and η at midrapidity (with transverse momenta 0.3 GeV/c$<p_T<$4.5 GeV/c for π° and 1.5 GeV/c$<p_T<$4.0 GeV/c for η covering the "thermal" as well as the "hard scattering" regime beyond 3 GeV/c) and determination of the thermal and direct photon to π° ratio. The pad preshower Photon Multiplicity Detector allows, by comparing with the charged particle multiplicity measurement, to determine the photon enrichment in an event or event class. The charged particle setup contains a Multistep Avalanche Chamber tracking system with Silicon Drift Chambers to measure the multiplicities and the momenta, and a Time-of-Flight System for particle identification. This allows to correlate electromagnetic and charged hadronic data within event classes, yields high statistics transverse momentum spectra of identified hadrons as well as Bose-Einstein correlation data. Energy flow measurements are available with mid rapidity ($3.7<\eta<5.5$) and zero-degree calorimetry.

Selected Publications

"Proposal for a Large Acceptance Hadron and Photon Spectrometer", CERN/SPSLC 91-17, SPSLC/P260 May, 1991.

"Memorandum to the SPSLC: Tracking System for WA98", CERN/SPSLC 93-5,

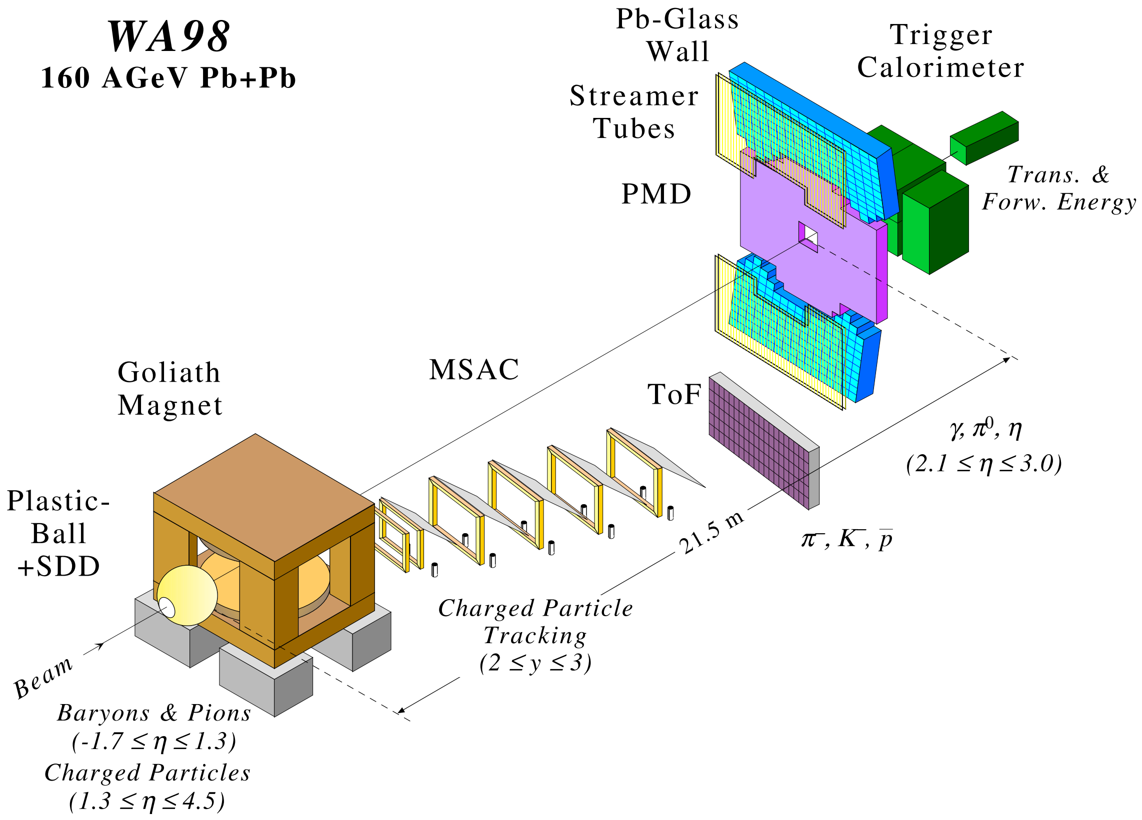

Figure 1: The WA98 Spectrometer

SPSLC/P260/Add.1 March, 1993.

Figure Details

Plastic Ball + Si-Drift Detector (SDD)
Vertex Magnet (GOLIATH)
Multi Step Avalanche Chambers (MSAC's) + Padchamber
ToF-Spectrometer
Photon Multiplicity Detector (PMD)
Pb-Glass Spectrometer
Hadron Calorimeter (MIRAC)
Zero-Degree Čerenkov Detector
Zero-Degree Calorimeter

Related Experiments

WA80, WA93