NA 50 - Muon Pair and Vector Mesons Production with Pb ions

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Physics Goals:	Yields versus energy density
Beams:	Pb at 160 GeV*A
Targets:	Pb

Physics Summary

Experiment NA 50 detects muon pairs from the mass continuum and from vector mesons decays ($\rho, \omega, \phi, J/\psi$ *and* ψ') up to an invariant mass of 7 GeV/c^2. It studies, on an event by event basis the behaviour of the different components of the mass spectrum as a function of energy density, multiplicity and impact parameter estimated from the transverse energy measured by an electromagnetic calorimeter and the responses of a silicon strip detector and a "very forward calorimeter". The apparatus is designed to work up to 5 10^7 Pb ions/burst. Acceptance in mass, rapidity and transverse momentum of the muon pair is 8% for the J/ψ and 1.2% for the ϕ. The rapidity coverage is in the range between 2.7 and 3.9. A "multiple target" system (20% of an interaction length) provides vertex and spectators reinteractions identification. Multiplicity is measured with 5% resolution within the rapidity interval 1.6, 4.0. Transverse energy is measured with a resolution better than 5% for central interactions and covers a rapidity range between 1.5 and 2.3. The number of spectators is measured and allows direct estimate of centrality. A quartz "beam hodoscope" detects and identifies the incoming ion and quartz Cerenkov counters monitor the beam position on the targets.

Selected Publications

Study of muon pairs and vector mesons produced in high energy Pb-Pb interactions. CERN/SPSLC 91-55, SPSLC/P 265-Rev, November 1991.

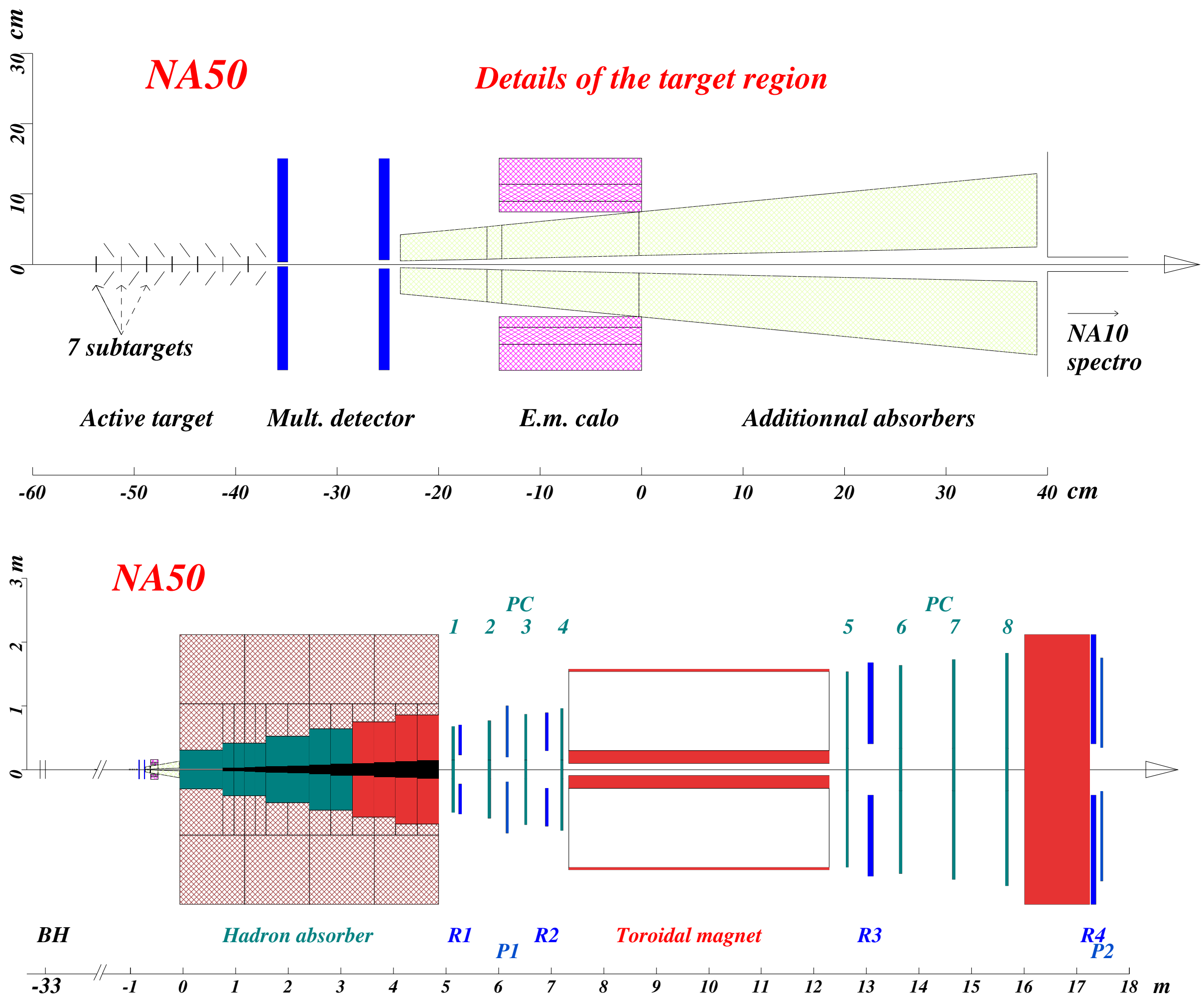

Figure 1: Lay-out of the NA 50 detector

Figure Details

R1,R2,R3,R4,P1,P2	Scintillation hodoscopes
PC1 to PC8	Multi-wire proportional chambers
BH	Quartz Beam "hodoscope"

Related Experiments

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