NA 38 - Muon Pair and Vector Mesons Production with O and S beams

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Physics Goals:	Yields versus energy density
Beams:	S, O, d, p at 200 GeV*A
Targets:	U, W, Cu, Al, C

Physics Summary

Experiment NA 38 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 estimated from the transverse energy measured by an electromagnetic calorimeter. The apparatus is designed to work up to 10^8 ions/burst. Acceptance in mass, rapidity and transverse momentum of the muon pair is 10% with a rapidity coverage between 2.8 and 4.0. A "multiple target" system (20% of an interaction length) provides vertex and spectators reinteractions identification. The electromagnetic calorimeter measures transverse energy with a resolution better than 5% for central interactions and covers a rapidity range between 1.7 and 4.1. A "beam hodoscope" detects and identifies the incoming ion and quartz Cerenkov counters identify the incident beam and monitor its position on the targets.

Selected Publications

Transverse energy distributions in nucleus-nucleus collisions at 200 GeV/nucleon. Phys. Lett. B251 (1990) 472

Study of J/ψ production in p-U, O-U and S-U interactions at 200 GeV per nucleon. Phys. Lett. B255 (1991) 459

Transverse momentum of J/ψ produced in p-Cu, p-U, ^{16}O-U and ^{32}S-U collisions at

200 GeV per nucleon. Phys. Lett. B262 (1991) 362

J/ψ and muon-pair cross-sections in proton-nucleus and nucleus-nucleus collisions at 200 GeV per nucleon. Phys. Lett. B270 (1991) 105

ϕ, ρ and ω production in p-U, O-U and S-U reactions at 200 GeV. Phys. Lett. B272 (1991) 449

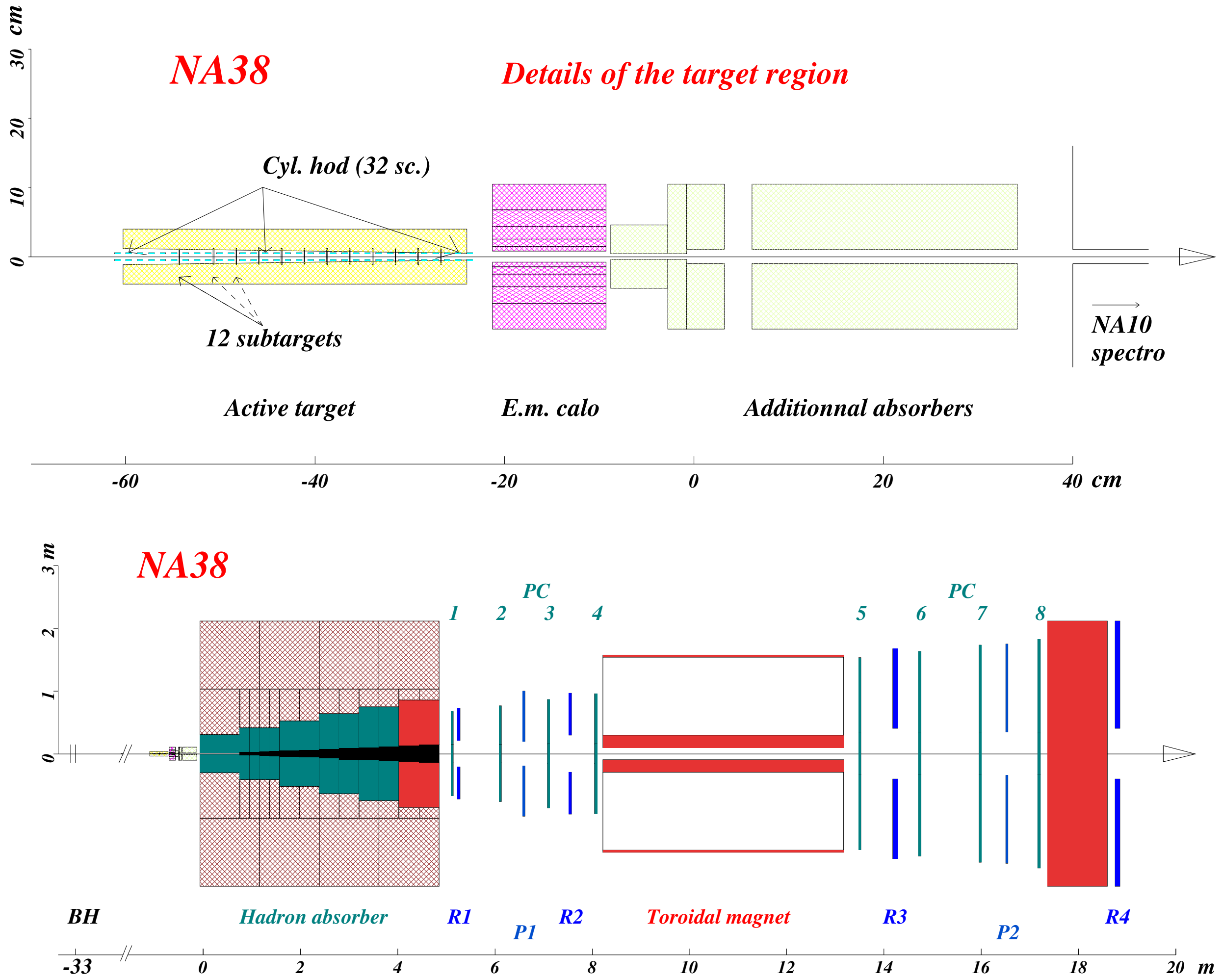

Figure 1: Lay-out of the NA 38 detector

Figure Details

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

Related Experiments

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