Direct Photon Search in p and π^+-induced Reactions at $\sqrt{s} = 17.3$ GeV

M. Mora [a] for the WA98 Collaboration

[a] *SUBATECH*

Presented by: M.-J. Mora

Abstract

Thermal photon radiation is considered to be a unique probe of Quark Gluon Plasma formation and can be used as a thermometer for temperatures reached in ultra-relativistic heavy-ion collisions. At the CERN SPS, the WA98 collaboration has measured a direct photon excess in $^{208}Pb + ^{208}Pb$ collisions at 158 AGeV.

In this work we discuss the π^0 and γ production cross sections in $p/\pi^+ + ^{208}Pb$ and $p/4\pi^+ + ^{12}C$ collisions at 160 GeV measured by the WA98 experiment in the transverse momentum range $0.5 < p_T < 3.5$ GeV/c. The question of the existence of thermal photon radiation in Pb + Pb collisions is addressed by comparison of the Pb + Pb direct photon yield to the scaled yield observed in pA collisions.

The present data provide the lowest $\sqrt{s}$ measurement of photons in p/π^+-induced reactions which could be of direct origin.

Preprint submitted to Elsevier Preprint *20 December 2000*