

Abstract Submitted
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First High p_T Physics Prospects with the Photon Spectrometer at ALICE KENTA SHIGAKI, Hiroshima University, ALICE COLLABORATION —
Suppression of high p_T hadrons, or so-called jet quenching, provided the first strong signature of hot and dense partonic matter created in heavy ion collisions at RHIC. The suppression patterns have been measured for π^0 up to ~ 20 GeV/ c , and also for various particles with a hope of systematic investigation of energy loss of quarks in the deconfined matter. At the ALICE experiment at LHC, starting its physics operation in the fall of 2009, the high p_T suppression is expected to be an even more powerful tool to investigate and quantitatively understand energy loss of quarks. LHC will provide high production rates of particles up to much higher p_T regions than RHIC does, and the high performance photon spectrometer, PHOS, of ALICE will allow identification of particles decaying into multiple photons up to very high p_T . Any dependence on quark flavors of energy loss and/or a possible difference between pseudo-scalar and vector mesons will be studied in details. Feasibility and prospects of high p_T measurements with the PHOS detector, especially in the first $p + p$ and Pb+Pb running in 2009-2010, will be discussed.

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