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QCD: Hard interactions
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Inclusive π^0 and K^0_S Production in Two-Photon Collisions at LEP

L3 Collaboration

Abstract

The reactions $e^+e^- \rightarrow e^+e^-\pi^0$ X and $e^+e^- \rightarrow e^+e^-K^0_S$ X are studied using data collected at LEP with the L3 detector at centre-of-mass energies between 189 and 202 GeV. Inclusive differential cross sections are measured as a function of the particle transverse momentum p_t and the pseudo-rapidity. For $p_t \leq 1.5$ GeV, the π^0 and K^0_S differential cross sections are described by an exponential, typical of soft hadronic processes. For $p_t \geq 1.5$ GeV, the cross sections show the presence of perturbative QCD processes, described by a power-law. The data are compared to Monte Carlo predictions and to NLO QCD calculations.

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