Abstract
Measurement of the Charm Production in γγ Interactions at LEP

The inclusive production of D*± mesons in two-photon collisions is measured with the ALEPH detector at e+e− centre-of-mass energies from 183 GeV to 209 GeV. A total of 360 ± 27 D*± meson events are observed from an integrated luminosity of 699 pb⁻¹. Contributions from direct and single-resolved processes are separated using the ratio of the transverse momentum $p_t^{D*±}$ of the D*± to the visible invariant mass $W_{vis}$ of the event. Differential cross sections of D*± production as functions of $p_t^{D*±}$ and the pseudorapidity $|\eta^{D*±}|$ are measured in the range 2 GeV/c < $p_t^{D*±}$ < 12 GeV/c and $|\eta^{D*±}|$ < 1.5. They are compared to next-to-leading order (NLO) perturbative QCD calculations. The extrapolation of the integrated visible D*± cross section to the total charm cross section, based on the PYTHIA Monte Carlo program, yields $\sigma (e^+e^- \rightarrow e^+e^- c\bar{c}) < \sqrt{s} = 197$ GeV = $731 \pm 74_{\text{stat}} \pm 47_{\text{syst}} \pm 157_{\text{extr}}$ pb.