

INTERNATIONAL CONFERENCE ON HIGH ENERGY PHYSICS
AMSTERDAM 2002

Abstract ID=ABS759

Hadron spectroscopy and exotics (experiment and theory)

Experiment: DELPHI

Contact Person: Chiara Mariotti

Institute: CERN

Email: chiara.mariotti@cern.ch

Measurement of Inclusive $f_1(1285)$ and $f_1(1420)$ Production in Z Decays with the DELPHI Detector

DELPHI Collaboration

Abstract

Inclusive production of two $(K\bar{K}\pi)^0$ states in the mass region 1.22–1.56 GeV in Z decays at LEP I has been observed by the DELPHI Collaboration. The measured masses and widths are 1274 ± 4 and 29 ± 12 MeV for the first peak and 1426 ± 4 and 51 ± 14 MeV for the second. A partial-wave analysis has been performed on the $(K\bar{K}\pi)^0$ spectrum in the mass range; the first peak is consistent with the quantum numbers $I^G(J^{PC}) = 0^+(0^{-+}/1^{++})$ and the second with $I^G(J^{PC}) = 0^+(1^{++})$. These measurements, as well as their total hadronic production rates per hadronic Z decay, are consistent with the mesons of the type $n\bar{n}$, where $n = \{u, d\}$. They are very likely to be the $f_1(1285)$ and the $f_1(1420)$, respectively.

Version 0

Date 2002-05-14 : 13:10:43'