Search for charginos nearly mass-degenerate with the lightest neutralino with the DELPHI detector

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Abstract

The data collected by DELPHI in 1999 at the four centre-of-mass energies of 192, 196, 200 and 202 GeV have been used to update the search for charginos nearly mass-degenerate with the lightest supersymmetric particle, which is assumed to be the lightest neutralino. Three different experimental tecniques are used to explore the mass difference region below $\Delta M = 3$ GeV/c^2: the search for long-lived heavy charged particles, the search for secondary vertices or kinks and the search for soft tracks accompanied by a high p_T ISR photon. No excess of events with respect to the Standard Model expectation has been observed, and preliminary results for exclusion regions in the plane of ΔM versus chargino mass are given.