

Antiprotons at balloon altitudes: Sources due to interstellar and trapped magnetic antiprotons

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Our earlier estimates of antiprotons fluxes by considering the interactions of CR with interstellar matter are lower when compared with the results of the balloon experiments. To better these estimates at energies below 1 GeV, we considered the tertiary component and the antineutron decay and estimated the total flux of antiprotons of interstellar origin both during the maximum and minimum solar activity. The results provided better estimates at low energies. To better these estimates, we realized the necessity to consider the local contribution due to the trapped magnetospheric antiprotons. These antiprotons confined in a belt are envisaged as natural products of nuclear interaction of the high energy cosmic rays (CR) with the constituents of atmosphere at altitudes of $L \sim 1.2$. These confined particles of sub GeV energies, due to radial diffusion, can diffuse to L-shells corresponding to the balloon experiments.