SECONDARY ANTIPROTONS FROM COSMIC RAY INTERACTIONS IN THE ATMOSPHERE

C.Y. Huang, L. Derome, and M. Buénerd
Institut des Sciences Nucléaires, IN2P3/CNRS, 53 Av. des Martyrs, 38026, Grenoble cedex, France .

The flux of antiprotons measured close to earth includes a Cosmic Ray (CR) component and a contribution occuring from CR-atmosphere interactions. A precise measurement of the first requires an accurate evaluation of the second. The antiproton flux generated in the atmosphere is calculated using the same approach as described in ref [**?**]. It consists of a simulation of the incident flux, production of secondaries by collisions between CRs and atmospheric nuclei, and propagation of all particles in the earth environment. The antiproton yield used in the event generator has been obtained from fitting a functionnal form to the invariant differential production cross section data from pp and p-nucleus accelerator experiments. Calculations are being made for balloon and satellite altitudes. The atmospheric antiproton contributions to the measurements of present and future embarked experiments (AMS, BESS, etc..) will be discussed.

References

[1] L. Derome et al., Phys. Lett. B 489(2000)1