Contribution ID : **48** Type : **not specified**

High precision standard model physics

Thursday, 9 October 2008 11:30 (1:00)

Abstract content

Sometime 14×10^9 years ago, the Universe started in a Big Bang. In that moment, the huge amount of energy liberated in the explosion coaleced forming equal quantities of matter amd antimatter. However, as the Universe expanded and cooled, its composition changed in such a way that, at about one second after the explosion, all the antimatter just disapeared, leaving matter to form the Universe as we known it today.

The main goal of the LHCb experiment, one of the four large experiments of the Large Hadron Collider, is to try to give answers to the question of why Nature prefers matter over antimatter ?. This will be done by studying the decay of b quarks and their antimatter partners, $\bar{b}$, which will be produced by billions in 14 TeV p-p collisions by the LHC. In addition, as "beauty" particles mainly decay in charm particles, an interesting program of charm physics will be carried on, allowing to measure quantities as for instance the $D^0 - \bar{D}^0$ mixing, with incredible precision.

Summary

Primary author(s) : Dr. MAGNIN, Javier (Centro Brasileiro de Pesquisas Fisicas)

Presenter(s) : Dr. MAGNIN, Javier (Centro Brasileiro de Pesquisas Fisicas)

Session Classification : Review Talks