



LHC Seminar

SPEAKER: Angelo Carbone (Universita e INFN (IT))
TITLE: **First evidence for CP Violation in charm decays at LHCb**
DATE: Tue 06/12/2011 11:00
PLACE: Main Auditorium

ABSTRACT

The LHCb Collaboration has recently observed evidence of CP violation in neutral D meson decays. CP violation in the charm sector is generically expected to be very small in the Standard Model, but can be enhanced in many models of new physics. In this seminar we will present the results of a search for time-integrated CP violation in $D^0 \rightarrow h^- h^+$ ($h=K, \pi$) decays, performed with around 0.6 fb^{-1} of data collected by LHCb in 2011. The difference in CP asymmetry between $D^0 \rightarrow K^- K^+$ and $D^0 \rightarrow \pi^- \pi^+$, $\Delta A_{CP} = A_{CP}(K^- K^+) - A_{CP}(\pi^- \pi^+)$ is measured to be $\Delta A_{CP} = [-0.82 \pm 0.21 \text{ (stat.)} \pm 0.11 \text{ (syst.)}]%$. This differs from the hypothesis of CP conservation by 3.5 sigma. Prospects for improved measurements of this quantity and other CP-violating observables in the charm sector will be briefly discussed.