



**Dottorato di Ricerca in Fisica e Astronomia
Dipartimento di Fisica "G. Occhialini"
Università degli Studi di Milano Bicocca**

"First observation of CP violation in charm hadrons and implications"

Due seminari per illustrare e discutere sia gli aspetti sperimentali che quelli teorici

Martedì 7 maggio 2019

Ore 14:30

Aula Marchetti Ed. U1

"Observation of CP violation in neutral charm decays at LHCb"

Prof. Angelo Carbone - Università degli Studi di Bologna

Abstract:

The existence of CP violation in the decays of strange and beauty mesons is well established experimentally by numerous measurements. By contrast, CP violation in the decays of charmed particles has escaped observation, until today. During the first two runs of the LHC, the LHCb collaboration has collected a sample of charmed hadrons of unprecedented size. This sample enables some of the most sensitive searches for CP violation ever performed. In this seminar, the observation of CP violation with $D^0 \rightarrow K^- K^+$ and $D^0 \rightarrow \pi^- \pi^+$, performed using the full data set collected by LHCb so far, which corresponds to an integrated luminosity of 9fb^{-1} , will be presented. In addition, a brief overview of a recent measurement of charm mixing at LHCb will be given.

"CP violation in the charm sector in the SM and beyond"

Prof. Luca Silvestrini - Università degli Studi di Roma Sapienza e CERN

Abstract:

We review the theoretical status of CP violation in charm meson mixing and in singly Cabibbo suppressed decays. We discuss the Standard Model expectation for the recently observed CP violation in ΔA_{CP} . We present a combination of current measurements related to neutral D mesons mixing, discussing the theoretical assumptions entering the combination process. We discuss how to generalize the current analysis in view of the foreseen experimental improvements, and show how possible new physics contributions can be probed with current and future data.

I seminari sono rivolti a docenti, studenti e a tutti gli interessati.