



LHC Seminar

SPEAKER: Francesca Dordei
TITLE: **Precision measurement of the CP-violating phase ϕ_s at LHCb**
DATE: 7 May 2019, 11:00
PLACE: 500-1-001 - Main Auditorium

ABSTRACT

Although the Standard Model (SM) proved to be a successful effective theory, it fails to explain various physics observations and its validity is expected to break down at some higher energy scale. The study of CP violation in decays of beauty hadrons provides a fundamental test of the predictions of the SM and represents a sensitive probe to search for physics effects that cannot be described within it. A good candidate for such indirect searches is the measurement of the CP violating phase ϕ_s which arises in the interference between the amplitudes of B_s mesons decaying directly and after oscillation via $b \rightarrow c\bar{c}s$ transitions. In this talk, the latest measurements of this phase and other important mixing parameters of the B_s system will be presented, together with the combination with previous independent LHCb measurements. These results are obtained using $B_s^0 \rightarrow J/\psi \phi$ and $B_s^0 \rightarrow J/\psi \pi^+ \pi^-$ decays from 2015 and 2016 proton-proton collision data collected with the LHCb detector.