



LHC Seminar

SPEAKER: **Raphaëlle Bailhache (Johann-Wolfgang-Goethe Univ. (DE))**

TITLE: **Heavy-flavour hadrons as probes of strongly-interacting matter: highlights from ALICE**

DATE: Tue 11/03/2014 11:00

PLACE: Council Chamber

ABSTRACT

The characterization of the Quark-Gluon Plasma (QGP), the deconfined state of strongly-interacting matter produced in high-energy collisions of heavy ions, is the main purpose of ALICE. Heavy quarks, i.e charm and beauty, play a key role in the determination of the QGP properties. They are formed on a shorter time scale with respect to the strongly-interacting matter and, therefore, they are suited to probe the interaction dynamics inside the medium. After three years of successful operation of ALICE with lead and proton beams delivered by the Large Hadron Collider (LHC), results from Pb-Pb, p-Pb and pp collisions will be presented.

In Pb-Pb collisions the heavy-flavour nuclear modification factor together with the elliptic-flow measurements allow one to study the heavy-quark transport properties in the hot and dense medium. The production of heavy quarks in heavy-ion collisions is furthermore also affected by the presence of cold nuclear matter in the initial state. The study of p-Pb collisions is instrumental to quantify these effects, and it supports the conjecture of significant final-state effects in Pb-Pb collisions. In pp collisions, heavy-flavour measurements provide the mandatory reference for the other systems and a crucial test for perturbative Quantum-ChromoDynamic calculations.

Recent results from ALICE for reconstructed D mesons and heavy-flavour decay leptons (muons, electrons) will be presented for pp, p-Pb and Pb-Pb collisions.

Organised by: M. Mangano, C. Lourenco, G. Unal.....

Tea and Coffee will be served at 10h30