

Inaugural lesson Chaires d'Alembert Université Paris-Saclay

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Date, time

OCTOBER 10th 2018

16:30

Place

LABORATOIRE DE L'ACCÉLÉRATEUR LINÉAIRE
ROOM 101, BUILDING 200
ORSAY CAMPUS

Particles with two heavy quarks, a new tool for particle physics ?

Jibo He



Jibo He is a recipient of the Jean d'Alembert junior researcher fellowship at Université Paris-Saclay, hosted by the Laboratoire de l'Accélérateur Linéaire - Orsay / CNRS. He is a professor of physics in the University of Chinese Academy of Sciences (UCAS), and is working on the Large Hadron Collider beauty (LHCb) experiment located at CERN.

Summary

The objective of particle physics is to understand the elementary components of the nature, and the interactions between them. At present, it is understood that the matter is formed by quarks and leptons, which are bounded together by the fundamental forces. They are theoretically quite well described by the so-called Standard Model of particle physics.

In this colloquium, where no prior knowledge of particle physics will be assumed, we will highlight the particles formed by two heavy quarks, the

beauty or the charm quark. We will discuss how the Large Hadron Collider beauty (LHCb) experiment located at CERN was used for their discovery and further studies, and the potential of this new tool for particle physics. We will focus on the doubly charmed baryon, and on the B_c meson made of a beauty quark and a charm antiquark, which is presently used to test the validity of one very basic theoretical pillar of the Standard Model, the assumption that all the leptons couple in exactly the same way to the fundamental interactions (Lepton Flavour Universality).

Host Laboratory

Laboratoire de l'accélérateur Linéaire,
CNRS & Université Paris-Sud
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