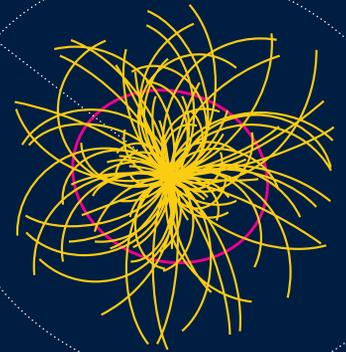


**UCL**

Université  
catholique  
de Louvain

Institut de recherche  
en mathématique et physique



# The Early Universe as a Probe of Fundamental Physics

par le Pr **Marco Drewes**

25 janvier 2018



Pr Marco Drewes

Marco Drewes has joined UCL in fall 2017 as a new academic in the Institut de Recherche en Mathématique et Physique. After obtaining a PhD at the Deutsches Elektronen Synchrotron (DESY), he has worked as a researcher at the École polytechnique fédérale de Lausanne, at the RWTH Aachen University, and at the Technical University of Munich. His research interests cover topics at the interface between particle physics and cosmology, such as the question how laboratory experiments can help to understand the origin of matter in the universe.

# The Early Universe as a Probe of Fundamental Physics

## Marco Drewes

### LEÇON INAUGURALE

LE JEUDI 25 JANVIER 2018 DE 16H30 À 17H30

La leçon sera suivie par une réception

Auditoire Charles de la Vallée Poussin  
(CYCLO1),

Bâtiment Marc de Hemptinne

Many properties of the cosmos that we observe today can be understood as the result of quantum processes in the hot and dense plasma that filled the universe in the first moments after the « big bang ». This allows cosmologists to understand the history of the observable universe in terms of elementary particles and the fundamental interactions between them. On the other hand, the extreme conditions in the primordial plasma allow particle physicists to test their ideas in an environment that cannot be created in the laboratory. With my research, I exploit this mutual benefit to learn about both, the fundamental laws of nature and how they shaped the cosmos that we live in. I will illustrate this with a few examples that connect quantum effects on the smallest scales to the fate of the universe as a whole.

### INFO

<https://agenda.irmp.ucl.ac.be/DrewesInauguralLecture>

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