



Vrije  
Universiteit  
Brussel

## 2009 International Solvay Chair in Physics Inaugural Lecture - Solvay Colloquium

“Particle physics and cosmology: towards understanding  
the Universe”

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#### Abstract

Knowledge gained so far in cosmology is to a large extent orthogonal to current knowledge in particle physics. There is matter and no anti-matter in our Universe, and we do not have a unique explanation of this asymmetry. There is dark matter in the cosmos, and we do not know what the particles it consists of. Cosmological expansion accelerates, and we do not know the fundamental physics behind this bizarre behavior. The origin of galaxies must have roots deep in quantum field theory, but we still have only a crude idea of what they are. Amazingly, all these mysteries will most probably be solved in a reasonably near future. I review these and other issues at the interface of particle physics and cosmology, with an emphasis on future progress in our understanding of the Universe.

Tuesday 29 September 2009 at 16h00

COFFEE AND TEA WILL BE SERVED AT 15H45 IN FRONT OF THE SOLVAY ROOM  
DRINK AT 17H15 IN FRONT OF THE SOLVAY ROOM



Ministère  
de la Communauté  
française

#### SOLVAY ROOM

UNIVERSITÉ LIBRE DE BRUXELLES  
CAMPUS PLAINE - BUILDING NO - 5TH FLOOR  
BOULEVARD DU TRIOMPHE - ACCESS 2  
1050 BRUSSELS



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