



2009 International Solvay Chair in Physics

Inaugural Lecture

Tuesday 29 September 2009 at 4:00 pm in the Solvay
room

Valery Rubakov

(Institute for Nuclear Research of the Russian Academy of
Sciences, Moscow, Russia)

*“Particle physics and cosmology: towards
understanding the Universe”*

“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.”



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Lectures

"Lectures on Inflation"

Abstract: The lectures will explain the inflationary cosmological model and its virtues. In particular, what inflation predicts for density perturbations and gravity waves, and what could be alternatives, will be discussed.

Lecture 1: *"Lectures on Inflation - 1."*

Monday 5 October
4:00 pm to 6:00 pm
Solvay room



Lecture 2: *"Lectures on Inflation - 2."*

Tuesday 6 October
4:00 pm to 6:00 pm
Solvay room

Lecture 3: *“Lectures on Inflation - 3.”*

Wednesday 7 October
4:00 pm to 6:00 pm
Solvay room



Lecture 4: *“Lectures on Inflation - 4.”*

Thursday 8 October
4:00 pm to 6:00 pm
Solvay room