



北京大学百年物理讲坛

Centennial Physics Lectures at Peking University

Lecture 1

Does the everyday world really obey quantum mechanics?

By Nobel Laureate in Physics

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Time: Thursday, 03:00 pm, March 4, 2010

Location: Chemistry Building, Area A, Room 204-206

Abstract

Quantum mechanics has been enormously successful in describing nature at the atomic level, and most physicists believe that it is in principle the "whole truth" about the world even at the everyday level. However, such a view *prima facie* leads to a severe problem: in certain circumstances, the most natural interpretation of the theory implies that no definite outcome of an experiment occurs until the act of "observation". For many decades this problem was regarded as "merely philosophical", in the sense that it was thought that it had no consequences which could be tested in experiment. However, in the last dozen or so years the situation has changed very dramatically in this respect. I will discuss the problem, some popular "resolutions" of it, the current experimental situation and prospects for the future.

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