

Preface

Quantum Leap: From Dirac and Feynman, Across the Universe, to Human Body and Mind is a monographic textbook in the field of quantum physics and its relations to human mind and body. The book has seven Chapters. The introductory Chapter gives both non-mathematical and mathematical preliminaries for understanding the text. The second Chapter presents the basics of both non-relativistic and relativistic quantum mechanics. The third Chapter introduces Feynman path integrals and their application to quantum fields and string theory, as well as some non-quantum applications. The fourth Chapter presents quantum universe in the form of loop quantum gravity and quantum cosmology. The fifth Chapter turns to the human body, applying quantum mechanics and electrodynamics to electro-muscular stimulation. The sixth Chapter presents modern quantum games and quantum computers. The seventh Chapter develops quantum theory of the mind and consciousness.

This book can be used as a textbook of a two-semester course in quantum physics and its modern applications, at the graduate (or, higher undergraduate) level. Some parts of the book can be also used by engineers, biologists, psychologists and computer scientists, as well as applied mathematicians, both in industry and academia. It includes a comprehensive bibliography on the subject and a detailed index.

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