DESCRIPTION

A concise, "no-frills" introduction to quantum computation and quantum cryptography for non-experts. Rather than concentrating on stories about scientists and philosophical concepts, it provides a step-by-step approach to quantum information. Starting from the idea of quantum cryptography, it presents the basic principles of quantum mechanics and explains how this can be used to make cryptography absolutely secure against eavesdropping. Subsequently, the most important quantum algorithms are explained and technical problems in realizing quantum computers are discussed, followed by a presentation of recent experiments -- some of which are found here in a textbook for the first time.

Easily accessible for undergraduates and graduates -- especially those studying subjects other than physics -- who need an introduction to this rapidly developing topic.

ABOUT THE AUTHOR

Oliver Morsch, born in 1970, received his Ph.D. in physics from Oxford University in 1999. He then accepted a post as senior researcher at the National Research Council of the National Institute for the Physics of Matter in Pisa, Italy. Dr. Morsch's research interests concentrate on ultracold atoms, Bose-Einstein condensation and quantum computers. He works as a freelance science journalist for various newspapers and journals and has published two popular science books with Wiley-VCH.
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