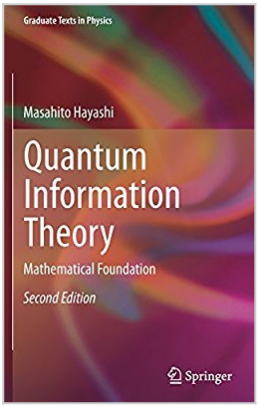

Quantum Information Theory: Mathematical Foundation (Graduate Texts in Physics)

By Masahito Hayashi

Quantum Information Theory: Mathematical Foundation (Graduate Texts in Physics) By Masahito Hayashi

This graduate textbook provides a unified view of quantum information theory. Clearly explaining the necessary mathematical basis, it merges key topics from both information-theoretic and quantum- mechanical viewpoints and provides lucid explanations of the basic results. Thanks to this unified approach, it makes accessible such advanced topics in quantum communication as quantum teleportation, superdense coding, quantum state transmission (quantum error-correction) and quantum encryption.
Since the publication of the preceding book *Quantum Information: An Introduction*, there have been tremendous strides in the field of quantum information. In particular, the following topics – all of which are addressed here – made seen major advances: quantum state discrimination, quantum channel capacity, bipartite and multipartite entanglement, security analysis on quantum communication, reverse Shannon theorem and uncertainty relation.
With regard to the analysis of quantum security, the present book employs an improved method for the evaluation of leaked information and identifies a remarkable relation between quantum security and quantum coherence. Taken together, these two improvements allow a better analysis of quantum state transmission. In addition, various types of the newly discovered uncertainty relation are explained.
Presenting a wealth of new developments, the book introduces readers to the latest advances and challenges in quantum information.
To aid in understanding, each chapter is accompanied by a set of exercises and solutions.

Quantum Information Theory: Mathematical Foundation (Graduate Texts in Physics)

By Masahito Hayashi

Quantum Information Theory: Mathematical Foundation (Graduate Texts in Physics) By Masahito Hayashi

This graduate textbook provides a unified view of quantum information theory. Clearly explaining the necessary mathematical basis, it merges key topics from both information-theoretic and quantum-mechanical viewpoints and provides lucid explanations of the basic results. Thanks to this unified approach, it makes accessible such advanced topics in quantum communication as quantum teleportation, superdense coding, quantum state transmission (quantum error-correction) and quantum encryption.
Since the publication of the preceding book *Quantum Information: An Introduction*, there have been tremendous strides in the field of quantum information. In particular, the following topics – all of which are addressed here – made seen major advances: quantum state discrimination, quantum channel capacity, bipartite and multipartite entanglement, security analysis on quantum communication, reverse Shannon theorem and uncertainty relation.
With regard to the analysis of quantum security, the present book employs an improved method for the evaluation of leaked information and identifies a remarkable relation between quantum security and quantum coherence. Taken together, these two improvements allow a better analysis of quantum state transmission. In addition, various types of the newly discovered uncertainty relation are explained.
Presenting a wealth of new developments, the book introduces readers to the latest advances and challenges in quantum information.
To aid in understanding, each chapter is accompanied by a set of exercises and solutions.

Quantum Information Theory: Mathematical Foundation (Graduate Texts in Physics) By Masahito Hayashi Bibliography

- Rank: #2203231 in Books
- Brand: Hayashi Masahito
- Published on: 2016-11-04
- Original language: Japanese
- Number of items: 1
- Dimensions: 9.21" h x 1.44" w x 6.14" l, .0 pounds
- Binding: Hardcover
- 636 pages

Editorial Review

From the Back Cover
This graduate textbook provides a unified view of quantum information theory. Clearly explaining the necessary mathematical basis, it merges key topics from both information-theoretic and quantum-mechanical viewpoints and provides lucid explanations of the basic results. Thanks to this unified approach, it makes accessible such advanced topics in quantum communication as quantum teleportation, superdense coding, quantum state transmission (quantum error-correction) and quantum encryption.
Since the publication of the preceding book *Quantum Information: An Introduction*, there have been tremendous strides in the field of quantum information. In particular, the following topics – all of which are addressed here – made seen major advances: quantum state discrimination, quantum channel capacity, bipartite and multipartite entanglement, security analysis on quantum communication, reverse Shannon theorem and uncertainty relation.
With regard to the analysis of quantum security, the present book employs an improved method for the evaluation of leaked information and identifies a remarkable relation between quantum security and quantum coherence. Taken together, these two improvements allow a better analysis of quantum state transmission. In addition, various types of the newly discovered uncertainty relation are explained.
Presenting a wealth of new developments, the book introduces readers to the latest advances and challenges in quantum information.
To aid in understanding, each chapter is accompanied by a set of exercises and solutions.

About the Author

Masahito Hayashi was born in Japan in 1971. He received the B.S. degree from the Faculty of Sciences in Kyoto University, Japan, in 1994 and the M.S. and Ph.D. degrees in Mathematics from Kyoto University, Japan, in 1996 and 1999, respectively.

He worked in Kyoto University as a Research Fellow of the Japan Society of the Promotion of Science (JSPS) from 1998 to 2000, and worked in the Laboratory for Mathematical Neuroscience, Brain Science Institute, RIKEN from 2000 to 2003, and worked in ERATO Quantum Computation and Information Project, Japan Science and Technology Agency (JST) as the Research Head from 2000 to 2006. He also worked in the Superrobust Computation Project Information Science and Technology Strategic Core (21st Century COE by MEXT) Graduate School of Information Science and Technology, The University of Tokyo as Adjunct Associate Professor from 2004 to 2007. He worked in the Graduate School of Information Sciences, Tohoku University as Associate Professor from 2007 to 2012. In 2012, he joined the Graduate School of Mathematics, Nagoya University as Professor. He also worked in Centre for Quantum Technologies, National University of Singapore as Visiting Research Associate Professor from 2009 to 2012 and as Visiting Research Professor from 2012 to now. In 2011, he received the Information Theory Society Paper Award (2011) for Information-Spectrum Approach to Second-Order Coding Rate in Channel Coding. In 2016, he received the Japan Academy Medal from the Japan Academy and the JSPS Prize from Japan Society for the Promotion of Science.

He is a member of the Editorial Board of the International Journal of Quantum Information and International Journal On Advances in Security. His research interests include classical and quantum information theory, information-theoretic security, and classical and quantum statistical inference.

Users Review

From reader reviews:

Cathy Thomas:

Here thing why this kind of Quantum Information Theory: Mathematical Foundation (Graduate Texts in Physics) are different and reputable to be yours. First of all reading a book is good nevertheless it depends in the content of the usb ports which is the content is as delightful as food or not. Quantum Information Theory: Mathematical Foundation (Graduate Texts in Physics) giving you information deeper since different ways, you can find any reserve out there but there is no e-book that similar with Quantum Information Theory: Mathematical Foundation (Graduate Texts in Physics). It gives you thrill looking at journey, its open up your own personal eyes about the thing which happened in the world which is probably can be happened around you. It is possible to bring everywhere like in area, café, or even in your means home by train. For anyone who is having difficulties in bringing the paper book maybe the form of Quantum Information Theory: Mathematical Foundation (Graduate Texts in Physics) in e-book can be your choice.

Rosemarie Cleveland:

Do you have something that you want such as book? The book lovers usually prefer to decide on book like comic, limited story and the biggest you are novel. Now, why not striving Quantum Information Theory: Mathematical Foundation (Graduate Texts in Physics) that give your enjoyment preference will be satisfied by reading this book. Reading practice all over the world can be said as the means for people to know world better then how they react towards the world. It can't be claimed constantly that reading habit only for the geeky individual but for all of you who wants to become success person. So , for all of you who want to start looking at as your good habit, you may pick Quantum Information Theory: Mathematical Foundation (Graduate Texts in Physics) become your own starter.

Floretta Simmons:

Your reading 6th sense will not betray you actually, why because this Quantum Information Theory: Mathematical Foundation (Graduate Texts in Physics) e-book written by well-known writer we are excited for well how to make book which might be understand by anyone who also read the book. Written in good manner for you, still dripping wet every ideas and writing skill only for eliminate your own hunger then you still doubt Quantum Information Theory: Mathematical Foundation (Graduate Texts in Physics) as good book but not only by the cover but also by the content. This is one book that can break don't judge book by its include, so do you still needing yet another sixth sense to pick this!? Oh come on your reading sixth sense already said so why you have to listening to a different sixth sense.

Lisa Potter:

This Quantum Information Theory: Mathematical Foundation (Graduate Texts in Physics) is brand-new way for you who has curiosity to look for some information as it relief your hunger associated with. Getting deeper you onto it getting knowledge more you know otherwise you who still having tiny amount of digest in reading this Quantum Information Theory: Mathematical Foundation (Graduate Texts in Physics) can be

the light food for you personally because the information inside this kind of book is easy to get through anyone. These books create itself in the form that is reachable by anyone, that's why I mean in the e-book type. People who think that in reserve form make them feel tired even dizzy this e-book is the answer. So you cannot find any in reading a book especially this one. You can find actually looking for. It should be here for you actually. So , don't miss that! Just read this e-book kind for your better life and knowledge.

Read Quantum Information Theory: Mathematical Foundation (Graduate Texts in Physics) By Masahito Hayashi for online ebook

Quantum Information Theory: Mathematical Foundation (Graduate Texts in Physics) By Masahito Hayashi Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Quantum Information Theory: Mathematical Foundation (Graduate Texts in Physics) By Masahito Hayashi books to read online.

Online Quantum Information Theory: Mathematical Foundation (Graduate Texts in Physics) By Masahito Hayashi ebook PDF download

Quantum Information Theory: Mathematical Foundation (Graduate Texts in Physics) By Masahito Hayashi Doc

Quantum Information Theory: Mathematical Foundation (Graduate Texts in Physics) By Masahito Hayashi Mobipocket

Quantum Information Theory: Mathematical Foundation (Graduate Texts in Physics) By Masahito Hayashi EPub

9AMB2TYQ8JD: Quantum Information Theory: Mathematical Foundation (Graduate Texts in Physics) By Masahito Hayashi