

The Functional Analysis of Quantum Information Theory: A Collection of Notes Based on Lectures by Gilles Pisier, K. R. Parthasarathy, Vern Paulsen and Andreas Winter (Lecture Notes in Physics)

By Ved Prakash Gupta, Prabha Mandayam, V.S. Sunder


[Download now](#)

[Read Online](#) ➔

The Functional Analysis of Quantum Information Theory: A Collection of Notes Based on Lectures by Gilles Pisier, K. R. Parthasarathy, Vern Paulsen and Andreas Winter (Lecture Notes in Physics) By Ved Prakash Gupta, Prabha Mandayam, V.S. Sunder

This book provides readers with a concise introduction to current studies on operator-algebras and their generalizations, operator spaces and operator systems, with a special focus on their application in quantum information science. This basic framework for the mathematical formulation of quantum information can be traced back to the mathematical work of John von Neumann, one of the pioneers of operator algebras, which forms the underpinning of most current mathematical treatments of the quantum theory, besides being one of the most dynamic areas of twentieth century functional analysis. Today, von Neumann's foresight finds expression in the rapidly growing field of quantum information theory. These notes gather the content of lectures given by a very distinguished group of mathematicians and quantum information theorists, held at the IMSc in Chennai some years ago, and great care has been taken to present the material as a primer on the subject matter. Starting from the basic definitions of operator spaces and operator systems, this text proceeds to discuss several important theorems including Stinespring's dilation theorem for completely positive maps and Kirchberg's theorem on tensor products of C^* -algebras. It also takes a closer look at the abstract characterization of operator systems and, motivated by the requirements of different tensor products in quantum information theory, the theory of tensor products in operator systems is discussed in detail. On the quantum information side, the book offers a rigorous treatment of quantifying entanglement in bipartite quantum systems, and moves on to review four different areas in which ideas from the theory of operator systems and operator algebras play a natural role: the issue of zero-error communication over quantum channels, the strong subadditivity property of quantum entropy, the different norms on quantum states and the corresponding induced norms on quantum channels, and, lastly, the applications of matrix-valued random variables in the quantum information setting.

 [**Download** The Functional Analysis of Quantum Information The ...pdf](#)

 [**Read Online** The Functional Analysis of Quantum Information T ...pdf](#)

The Functional Analysis of Quantum Information Theory: A Collection of Notes Based on Lectures by Gilles Pisier, K. R. Parthasarathy, Vern Paulsen and Andreas Winter (Lecture Notes in Physics)

By Ved Prakash Gupta, Prabha Mandayam, V.S. Sunder

The Functional Analysis of Quantum Information Theory: A Collection of Notes Based on Lectures by Gilles Pisier, K. R. Parthasarathy, Vern Paulsen and Andreas Winter (Lecture Notes in Physics) By Ved Prakash Gupta, Prabha Mandayam, V.S. Sunder

This book provides readers with a concise introduction to current studies on operator-algebras and their generalizations, operator spaces and operator systems, with a special focus on their application in quantum information science. This basic framework for the mathematical formulation of quantum information can be traced back to the mathematical work of John von Neumann, one of the pioneers of operator algebras, which forms the underpinning of most current mathematical treatments of the quantum theory, besides being one of the most dynamic areas of twentieth century functional analysis. Today, von Neumann's foresight finds expression in the rapidly growing field of quantum information theory. These notes gather the content of lectures given by a very distinguished group of mathematicians and quantum information theorists, held at the IMSc in Chennai some years ago, and great care has been taken to present the material as a primer on the subject matter. Starting from the basic definitions of operator spaces and operator systems, this text proceeds to discuss several important theorems including Stinespring's dilation theorem for completely positive maps and Kirchberg's theorem on tensor products of C^* -algebras. It also takes a closer look at the abstract characterization of operator systems and, motivated by the requirements of different tensor products in quantum information theory, the theory of tensor products in operator systems is discussed in detail. On the quantum information side, the book offers a rigorous treatment of quantifying entanglement in bipartite quantum systems, and moves on to review four different areas in which ideas from the theory of operator systems and operator algebras play a natural role: the issue of zero-error communication over quantum channels, the strong subadditivity property of quantum entropy, the different norms on quantum states and the corresponding induced norms on quantum channels, and, lastly, the applications of matrix-valued random variables in the quantum information setting.

The Functional Analysis of Quantum Information Theory: A Collection of Notes Based on Lectures by Gilles Pisier, K. R. Parthasarathy, Vern Paulsen and Andreas Winter (Lecture Notes in Physics) By Ved Prakash Gupta, Prabha Mandayam, V.S. Sunder Bibliography

- Sales Rank: #3431747 in Books
- Published on: 2015-06-05
- Released on: 2015-06-05
- Original language: English
- Number of items: 1
- Dimensions: 9.25" h x .35" w x 6.10" l, .0 pounds
- Binding: Paperback
- 139 pages

 [**Download** The Functional Analysis of Quantum Information The ...pdf](#)

 [**Read Online** The Functional Analysis of Quantum Information T ...pdf](#)

Download and Read Free Online The Functional Analysis of Quantum Information Theory: A Collection of Notes Based on Lectures by Gilles Pisier, K. R. Parthasarathy, Vern Paulsen and Andreas Winter (Lecture Notes in Physics) By Ved Prakash Gupta, Prabha Mandayam, V.S. Sunder

Editorial Review

Review

“This volume is a collection of notes from a two-week workshop ... the contributions from the four workshop speakers are quite well written and the editors have achieved a high level of consistency in style and terminology. ... This collection will be of interest to researchers in physics, mathematics, and theoretical computer science.” (Kevin J. Compton, Mathematical Reviews, January, 2016)

From the Back Cover

This book provides readers with a concise introduction to current studies on operator-algebras and their generalizations, operator spaces and operator systems, with a special focus on their application in quantum information science. This basic framework for the mathematical formulation of quantum information can be traced back to the mathematical work of John von Neumann, one of the pioneers of operator algebras, which forms the underpinning of most current mathematical treatments of the quantum theory, besides being one of the most dynamic areas of twentieth century functional analysis. Today, von Neumann’s foresight finds expression in the rapidly growing field of quantum information theory. These notes gather the content of lectures given by a very distinguished group of mathematicians and quantum information theorists, held at the IMSc in Chennai some years ago, and great care has been taken to present the material as a primer on the subject matter. Starting from the basic definitions of operator spaces and operator systems, this text proceeds to discuss several important theorems including Stinespring’s dilation theorem for completely positive maps and Kirchberg’s theorem on tensor products of C^* -algebras. It also takes a closer look at the abstract characterization of operator systems and, motivated by the requirements of different tensor products in quantum information theory, the theory of tensor products in operator systems is discussed in detail. On the quantum information side, the book offers a rigorous treatment of quantifying entanglement in bipartite quantum systems, and moves on to review four different areas in which ideas from the theory of operator systems and operator algebras play a natural role: the issue of zero-error communication over quantum channels, the strong subadditivity property of quantum entropy, the different norms on quantum states and the corresponding induced norms on quantum channels, and, lastly, the applications of matrix-valued random variables in the quantum information setting.

Users Review

From reader reviews:

Rose Cotner:

The book The Functional Analysis of Quantum Information Theory: A Collection of Notes Based on Lectures by Gilles Pisier, K. R. Parthasarathy, Vern Paulsen and Andreas Winter (Lecture Notes in Physics) make you feel enjoy for your spare time. You can use to make your capable much more increase. Book can being your best friend when you getting pressure or having big problem along with your subject. If you can make looking at a book The Functional Analysis of Quantum Information Theory: A Collection of Notes Based on Lectures by Gilles Pisier, K. R. Parthasarathy, Vern Paulsen and Andreas Winter (Lecture Notes in Physics) for being your habit, you can get a lot more advantages, like add your own personal capable, increase your knowledge about a few or all subjects. It is possible to know everything if you like open and

read a e-book The Functional Analysis of Quantum Information Theory: A Collection of Notes Based on Lectures by Gilles Pisier, K. R. Parthasarathy, Vern Paulsen and Andreas Winter (Lecture Notes in Physics). Kinds of book are several. It means that, science guide or encyclopedia or other individuals. So , how do you think about this publication?

Vicki Allen:

What do you ponder on book? It is just for students because they're still students or this for all people in the world, what the best subject for that? Simply you can be answered for that problem above. Every person has various personality and hobby for every other. Don't to be forced someone or something that they don't wish do that. You must know how great in addition to important the book The Functional Analysis of Quantum Information Theory: A Collection of Notes Based on Lectures by Gilles Pisier, K. R. Parthasarathy, Vern Paulsen and Andreas Winter (Lecture Notes in Physics). All type of book would you see on many solutions. You can look for the internet options or other social media.

Hattie Leclair:

A lot of people always spent their particular free time to vacation or go to the outside with them family or their friend. Are you aware? Many a lot of people spent many people free time just watching TV, or perhaps playing video games all day long. If you need to try to find a new activity honestly, that is look different you can read a new book. It is really fun for you personally. If you enjoy the book that you simply read you can spent the entire day to reading a publication. The book The Functional Analysis of Quantum Information Theory: A Collection of Notes Based on Lectures by Gilles Pisier, K. R. Parthasarathy, Vern Paulsen and Andreas Winter (Lecture Notes in Physics) it doesn't matter what good to read. There are a lot of people who recommended this book. They were enjoying reading this book. When you did not have enough space bringing this book you can buy the particular e-book. You can m0ore simply to read this book from the smart phone. The price is not too expensive but this book offers high quality.

Hattie Adkins:

The book untitled The Functional Analysis of Quantum Information Theory: A Collection of Notes Based on Lectures by Gilles Pisier, K. R. Parthasarathy, Vern Paulsen and Andreas Winter (Lecture Notes in Physics) contain a lot of information on the item. The writer explains your ex idea with easy means. The language is very simple to implement all the people, so do definitely not worry, you can easy to read the idea. The book was compiled by famous author. The author gives you in the new period of literary works. You can actually read this book because you can read more your smart phone, or model, so you can read the book within anywhere and anytime. If you want to buy the e-book, you can wide open their official web-site as well as order it. Have a nice go through.

Download and Read Online The Functional Analysis of Quantum

**Information Theory: A Collection of Notes Based on Lectures by
Gilles Pisier, K. R. Parthasarathy, Vern Paulsen and Andreas
Winter (Lecture Notes in Physics) By Ved Prakash Gupta, Prabha
Mandayam, V.S. Sunder #B3OJEQVFZK2**

Read The Functional Analysis of Quantum Information Theory: A Collection of Notes Based on Lectures by Gilles Pisier, K. R. Parthasarathy, Vern Paulsen and Andreas Winter (Lecture Notes in Physics) By Ved Prakash Gupta, Prabha Mandayam, V.S. Sunder for online ebook

The Functional Analysis of Quantum Information Theory: A Collection of Notes Based on Lectures by Gilles Pisier, K. R. Parthasarathy, Vern Paulsen and Andreas Winter (Lecture Notes in Physics) By Ved Prakash Gupta, Prabha Mandayam, V.S. Sunder 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 The Functional Analysis of Quantum Information Theory: A Collection of Notes Based on Lectures by Gilles Pisier, K. R. Parthasarathy, Vern Paulsen and Andreas Winter (Lecture Notes in Physics) By Ved Prakash Gupta, Prabha Mandayam, V.S. Sunder books to read online.

Online The Functional Analysis of Quantum Information Theory: A Collection of Notes Based on Lectures by Gilles Pisier, K. R. Parthasarathy, Vern Paulsen and Andreas Winter (Lecture Notes in Physics) By Ved Prakash Gupta, Prabha Mandayam, V.S. Sunder ebook PDF download

The Functional Analysis of Quantum Information Theory: A Collection of Notes Based on Lectures by Gilles Pisier, K. R. Parthasarathy, Vern Paulsen and Andreas Winter (Lecture Notes in Physics) By Ved Prakash Gupta, Prabha Mandayam, V.S. Sunder Doc

The Functional Analysis of Quantum Information Theory: A Collection of Notes Based on Lectures by Gilles Pisier, K. R. Parthasarathy, Vern Paulsen and Andreas Winter (Lecture Notes in Physics) By Ved Prakash Gupta, Prabha Mandayam, V.S. Sunder Mobipocket

The Functional Analysis of Quantum Information Theory: A Collection of Notes Based on Lectures by Gilles Pisier, K. R. Parthasarathy, Vern Paulsen and Andreas Winter (Lecture Notes in Physics) By Ved Prakash Gupta, Prabha Mandayam, V.S. Sunder EPub

B3OJEQVFZK2: The Functional Analysis of Quantum Information Theory: A Collection of Notes Based on Lectures by Gilles Pisier, K. R. Parthasarathy, Vern Paulsen and Andreas Winter (Lecture Notes in Physics) By Ved Prakash Gupta, Prabha Mandayam, V.S. Sunder