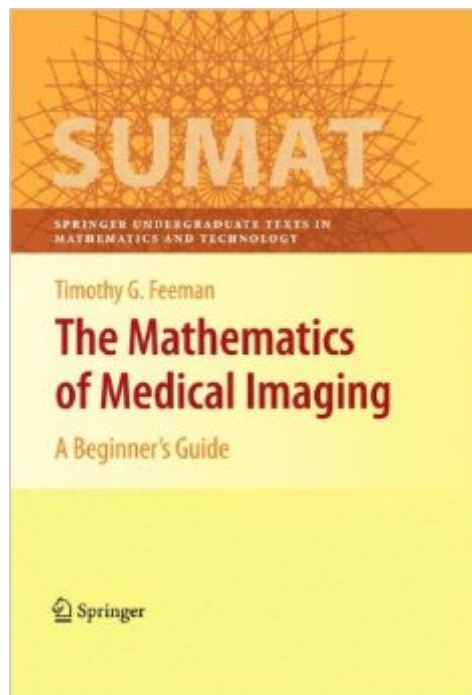


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The Mathematics Of Medical Imaging: A Beginner's Guide (Springer Undergraduate Texts In Mathematics And Technology)



Synopsis

This text explores medical imaging, one of the most significant areas of recent mathematical applications, in a concise manner accessible to undergraduate students. The author emphasizes the mathematical aspects of medical imaging, including not only the theoretical background, but also the role of approximation methods and the computer implementation of the inversion algorithms. In twenty-first century health care, CAT scans, ultrasounds, and MRIs are commonplace. Significant computational advances, along with the development, design, and improvement of the machines themselves, can only occur in conjunction with a proper understanding of the mathematics. This book is inherently interdisciplinary in nature, and therefore is appropriate for students of engineering, physics, and computer science, in addition to mathematics.

Book Information

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Customer Reviews

This is a short and self-contained introduction to the mathematics of tomography reconstruction, with specially focus to the CT reconstruction. The book is clear, didactic and easy to read. It has with a nice collection of proposed problems at the end of the chapter. In my option, the book has three fails 1. There is no appendix with detailed the solution of the exercises. This feature is always

appreciated for me, although many of the problems are easy, they are direct applications of the theory, they always gives the opportunities to discuss interesting features or advance something that will be explaining in the next chapters. 2. The chapter about complex numbers is unnecessary; because I think that everyone who reads this book will has knowledge in this topic. A good compromise would be to suppress this chapter and adding an appendix with detailed solutions of the problems 3. the book would improve with an introduction to algorithms and codes in some high level language like MatLab or Mapple. This point is mention inside the book, but it should be more explicit. I recommend this book for anyone who wants a quick introduction (a first step) to the mathematics behind CT reconstruction.

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