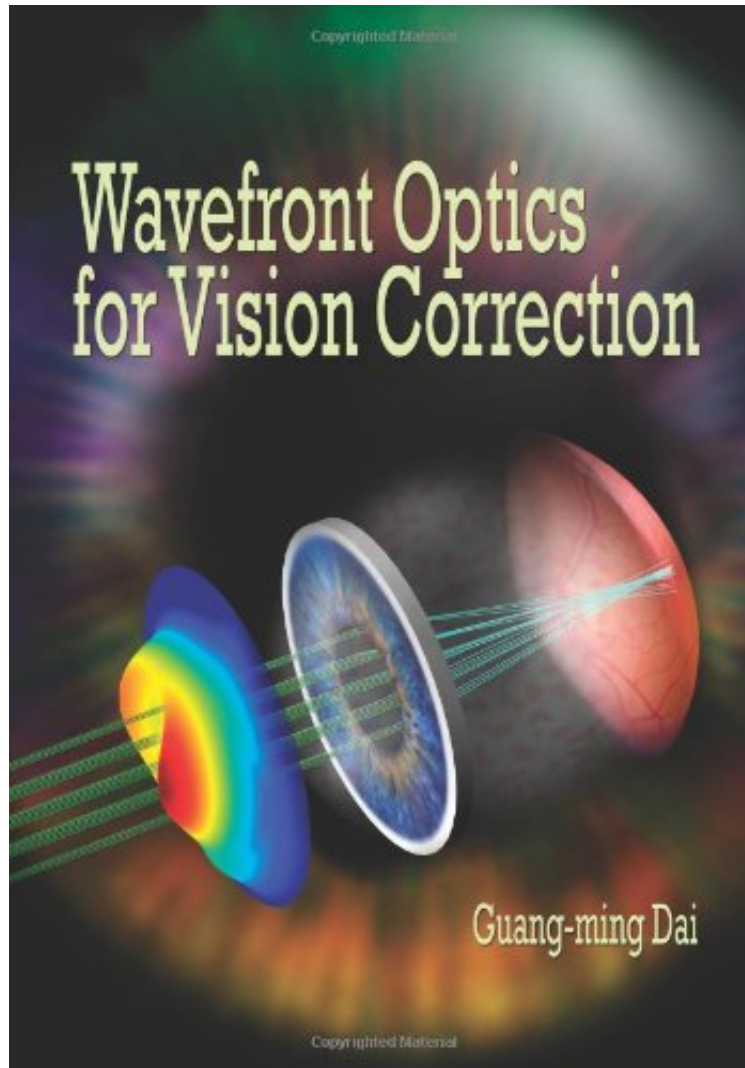


[Free] Wavefront Optics for Vision Correction (SPIE Press Monograph Vol. PM179)

Wavefront Optics for Vision Correction (SPIE Press Monograph Vol. PM179)

Guang-ming (George) Dai

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Guang-ming (George) Dai : Wavefront Optics for Vision Correction (SPIE Press Monograph Vol. PM179)

before purchasing it in order to gauge whether or not it would be worth my time, and all praised Wavefront Optics for Vision Correction (SPIE Press Monograph Vol. PM179):

0 of 0 people found the following review helpful. Type of papersBy ZeyadThis book is so good but the type of papers is like not smooth and oldNot like the magazine papers3 of 3 people found the following review helpful. Much needed book in this fieldBy ExtremeAO1GM Dai did an excellent job with this book, and I will not be surprised if this becomes the commanding text in this field. Hartmann-Shack (HS) sensors are in pretty much every clinic and are used

everyday to guide refractive surgery procedures (i.e. LASIK). So one would imagine that for the sake of the patient, he/she would like the wavefront map that pops onto the computer monitor for the doctor to see to be an accurate representation of his/her ocular wavefront map. Unfortunately, that's not the case these days. GM Dai goes over, step by step, how to get from a raw HS spot pattern image to the colorful surface plots representing the wavefront error that we are accustomed to seeing as customers or researchers. He does so through both zonal and modal methods and describes in detail, the pros and cons of the two. Other useful equations include refractive error calculations and ablation algorithms, which are all very well written. GM Dai does not have a pure optics background, as his description of EM waves and image formation are technically incorrect. Also, he only included zonal reconstruction algorithm for square apertures (have you seen any square eyes lately?). I have implemented these algorithms for circular pupils, and believe me, it's a lot more complicated. These oversights warrant 1 less star. I also recently met GM Dai and tried to talk to him about my thoughts on wavefront reconstruction. He basically dismissed what I had to say which is not how we scientists should do things - that cost this book another star. 0 of 0 people found the following review helpful. Like to buy a new book with a great discount By Jack Shih Wow, 99% new. Like to buy a new book with a great discount!

This book addresses some of the issues in visual optics with a functional analysis of ocular aberrations, especially for the purpose of vision correction. The basis is the analytical representation of ocular aberrations with a set of orthonormal polynomials, such as Zernike polynomials or the Fourier series. Although the aim of this book is the application of wavefront optics to laser vision correction, most of the theories discussed are equally applicable to other methods of vision correction, such as contact lenses and intraocular lenses. Contents - Preface - Symbols, Notations, and Abbreviations - Introduction - Fundamentals of Ocular Wavefront Correction - Ocular Wavefront Representation - Ocular Wavefront Sensing and Reconstruction - Ocular Wavefront Conversion - Ocular Wavefront Transformation - Ocular Wavefront Propagation - Optical Metrics of Ocular Wavefronts - Clinical Results of Wavefront-Driven Refractive Surgery - Author Index - Subject Index