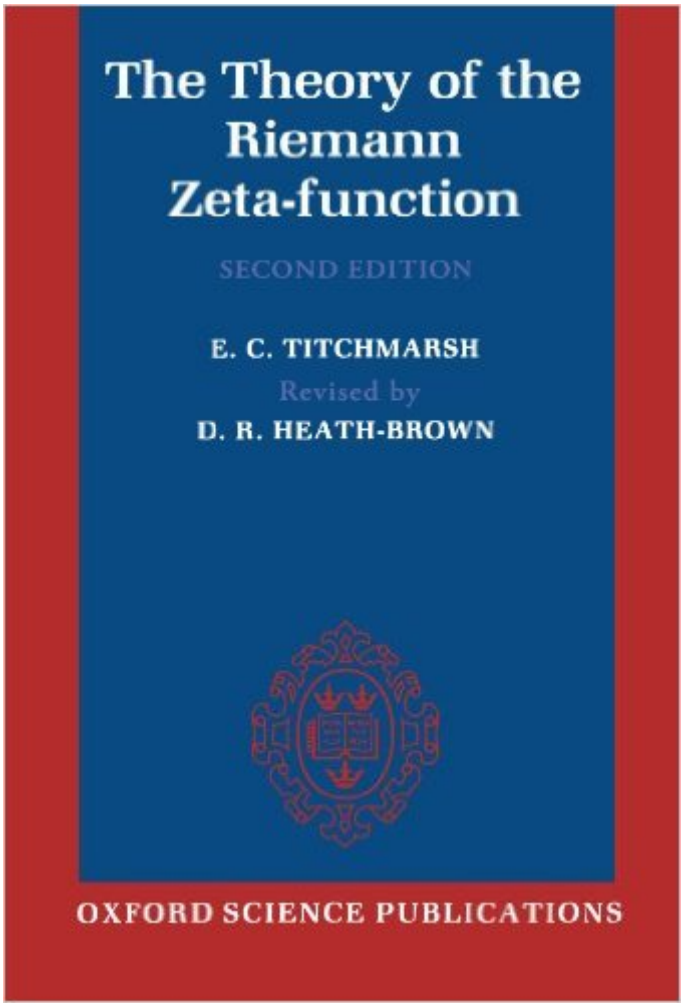
The Theory Of The Riemann Zeta-Function (Oxford Science Publications)



Synopsis

The Riemann zeta-function embodies both additive and multiplicative structures in a single function, making it our most important tool in the study of prime numbers. This volume studies all aspects of the theory, starting from first principles and probing the function’s own challenging theory, with the famous and still unsolved "Riemann hypothesis" at its heart. The second edition has been revised to include descriptions of work done in the last forty years and is updated with many additional references; it will provide stimulating reading for postgraduates and workers in analytic number theory and classical analysis.

Book Information

Series: Oxford Science Publications

Paperback: 422 pages

Publisher: Oxford University Press; 2 edition (February 5, 1987)

Language: English

ISBN-10: 0198533691

ISBN-13: 978-0198533696

Product Dimensions: 9.2 x 0.9 x 6.2 inches

Shipping Weight: 1.7 pounds (View shipping rates and policies)

Average Customer Review: 4.7 out of 5 starsÂ Â See all reviewsÂ (6 customer reviews)

Best Sellers Rank: #1,540,401 in Books (See Top 100 in Books) #74 inÂ Books > Science & Math > Mathematics > Research #507 inÂ Books > Science & Math > Mathematics > Pure Mathematics > Number Theory #1268 inÂ Books > Science & Math > Mathematics > History

Customer Reviews

This is the true encyclopaedia of the zeta function. Although I prefer Ivic, I always have the feeling that Titchmarsh wants to appear brilliant.This book cannot be criticized because of the amount of time and effort that must have been spent on it. It was update in 1986 by Heath Brown.It is useless to summarize the contents because it mainly has everything, and most theorems have several proofs and very long comments.One thing that is missing is more stuff about prime number distributions (for this, check Ingham, Edward’s, and a bit of Ivic’s).It never becomes redundant, and it can either be used a source for additional information, as dictionary, or it can be used in a linear way.

I’ve read meticulously the chapters in this book on the functional equation of the zeta function, the

prime number theorem, the approximate functional equation, the order of the zeta function in the critical strip, and the Dirichlet divisor problem (which can be expressed as a question about the square of the zeta function), and also a sprinkling of material from some of the other chapters. This is not a bad book to learn from, but the author's ways of speaking are not always modern. I think that a reader who wants to learn the analytic theory of the zeta function would do better to read Ivic's "The Riemann Zeta-Function: Theory and Applications" or Edwards' "Riemann's Zeta Function". Edwards' book does not have as much material as either Ivic or Titchmarsh but it presents the material in a historical setting. Both Ivic's book and Edwards' book are published by Dover and thus are quite cheap. For a really modern presentation of the analytic theory of the Riemann zeta function (and other L-functions, both L-functions for Dirichlet characters and for modular forms), dip into Iwaniec and Kowalski's "Analytic Number Theory". For example, Iwaniec and Kowalski prove an approximate functional equation for general L-functions that uses smoothing functions, which is not a technique that Titchmarsh uses.

Titchmarch is well known in the theory of functions, in this book, he described the Riemann's Zeta function in the most comprehensive way. (e. g. in the topic of functional equation, he quoted 7 methods) I cannot find any other book more comprehensive than this one. (though in order the theories, you must have some background knowledge and patience !)

1965-1996 (Oxford Science Publications) Data Analysis: A Bayesian Tutorial (Oxford Science Publications) Introductory Statistical Mechanics (Oxford Science Publications) Nuclear and Particle Physics (Oxford Science Publications) Prime Obsession: Bernhard Riemann and the Greatest Unsolved Problem in Mathematics