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The Riemann hypothesis. A resource for the aficionado and virtuoso alike.
(English)

CMS Books in Mathematics/Ouvrages de Mathématiques de la SMC. New York, NY: Springer. xiv, 533 p. EUR 62.95/net; SFR 110.00; \$ 79.95; £ 48.50 (2007). ISBN 978-0-387-72125-5/hbk

This book is intended as a reference work on the Riemann Hypothesis (RH). It proves some of the basic theorems on the Riemann Zeta-function, and describes many more. These cover, in the first part of the book, analytic preliminaries, algorithms for calculating $\zeta(s)$, evidence for RH, statements equivalent to RH, generalizations of RH, deductions from RH, and attempts to prove RH. The first part of the book concludes with a formulary and a timeline.

The second, longer, part of the book contains reproductions of four survey articles, by Bombieri, Sarnak, Conrey and Ivić, and 20 significant original research papers.

This book will undoubtedly be extremely useful for anyone making a serious study of the zeta-function, and especially those with an interest in the historical development of the subject. The choice of material is good, and the discussion is helpful. Many of the papers reproduced are difficult to track down nowadays, and anyone working in the area will benefit from a study of them.

Overall this is a book which belongs on the shelves of anyone interested in the RH.

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Keywords : Riemann hypothesis; book; history; original articles

Classification :

- *11M26 Nonreal zeros of zeta(s) and L(s,chi)
- 11-02 Research monographs (number theory)
- 11-03 Historical (number theory)
- 00B60 Collections of reprinted articles