Special Issue Reprint

Computer Algebra in Scientific Computing

www.mdpi.com/books/reprint/1768

Edited by
Andreas Weber
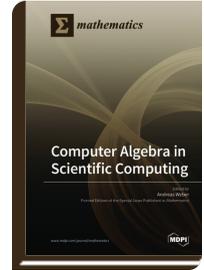
Although scientific computing is very often associated with numeric computations, the use of computer algebra methods in scientific computing has obtained considerable attention in the last two decades. Computer algebra methods are especially suitable for parametric analysis of the key properties of systems arising in scientific computing. The expression-based computational answers generally provided by these methods are very appealing as they directly relate properties to parameters and speed up testing and tuning of mathematical models through all their possible behaviors. This book contains 8 original research articles dealing with a broad range of topics, ranging from algorithms, data structures, and implementation techniques for high-performance sparse multivariate polynomial arithmetic over the integers and rational numbers over methods for certifying the isolated zeros of polynomial systems to computer algebra problems in quantum computing.

MDPI\Books

Publishing Open Access Books & Series

MDPI Books offers quality open access book publishing to promote the exchange of ideas and knowledge in a globalized world. MDPI Books encompasses all the benefits of open access – high availability and visibility, as well as wide and rapid dissemination. With MDPI Books, you can complement the digital version of your work with a high quality printed counterpart.

Open Access
Your scholarly work is accessible worldwide without any restrictions. All authors retain the copyright for their work distributed under the terms of the Creative Commons Attribution License.

Author Focus
Authors and editors profit from MDPI's over two decades of experience in open access publishing, our customized personal support throughout the entire publication process, and competitive processing charges as well as unique contributor discounts on book purchases.

High Quality & Rapid Publication
MDPI ensures a thorough review for all published items and provides a fast publication procedure. State-of-the-art research and time-sensitive topics are released with a minimum amount of delay.

High Visibility
Due to our global network and well-known channel partners, we ensure maximum visibility and broad dissemination. Title information of books is sent to international indexing databases and archives, such as the Directory of Open Access Books (DOAB), and the Verzeichnis Lieferbarer Bücher (VLB).

Print on Demand and Multiple Formats
MDPI Books are available for purchase and to read online at any time. Our print-on-demand service offers a sustainable, cost-effective and fast way to publish MDPI Books printed versions.

Learn more ▶ mdpi.com/books