



A Concise Introduction to Geometric Numerical Integration (Monographs and Research Notes in Mathematics)

Sergio Blanes, Fernando Casas

[Download now](#)

[Click here](#) if your download doesn't start automatically

A Concise Introduction to Geometric Numerical Integration (Monographs and Research Notes in Mathematics)

Sergio Blanes, Fernando Casas

A Concise Introduction to Geometric Numerical Integration (Monographs and Research Notes in Mathematics) Sergio Blanes, Fernando Casas

Discover How Geometric Integrators Preserve the Main Qualitative Properties of Continuous Dynamical Systems

A Concise Introduction to Geometric Numerical Integration presents the main themes, techniques, and applications of geometric integrators for researchers in mathematics, physics, astronomy, and chemistry who are already familiar with numerical tools for solving differential equations. It also offers a bridge from traditional training in the numerical analysis of differential equations to understanding recent, advanced research literature on numerical geometric integration.

The book first examines high-order classical integration methods from the structure preservation point of view. It then illustrates how to construct high-order integrators via the composition of basic low-order methods and analyzes the idea of splitting. It next reviews symplectic integrators constructed directly from the theory of generating functions as well as the important category of variational integrators. The authors also explain the relationship between the preservation of the geometric properties of a numerical method and the observed favorable error propagation in long-time integration. The book concludes with an analysis of the applicability of splitting and composition methods to certain classes of partial differential equations, such as the Schrödinger equation and other evolution equations.

The motivation of geometric numerical integration is not only to develop numerical methods with improved qualitative behavior but also to provide more accurate long-time integration results than those obtained by general-purpose algorithms. Accessible to researchers and post-graduate students from diverse backgrounds, this introductory book gets readers up to speed on the ideas, methods, and applications of this field. Readers can reproduce the figures and results given in the text using the MATLAB® programs and model files available online.

 [Download A Concise Introduction to Geometric Numerical Inte ...pdf](#)

 [Read Online A Concise Introduction to Geometric Numerical In ...pdf](#)

Download and Read Free Online A Concise Introduction to Geometric Numerical Integration (Monographs and Research Notes in Mathematics) Sergio Blanes, Fernando Casas

From reader reviews:

David Clark:

As people who live in the particular modest era should be up-date about what going on or facts even knowledge to make all of them keep up with the era which is always change and move forward. Some of you maybe may update themselves by looking at books. It is a good choice for yourself but the problems coming to an individual is you don't know what kind you should start with. This A Concise Introduction to Geometric Numerical Integration (Monographs and Research Notes in Mathematics) is our recommendation so you keep up with the world. Why, as this book serves what you want and need in this era.

Joshua Stickley:

Spent a free the perfect time to be fun activity to complete! A lot of people spent their spare time with their family, or their own friends. Usually they undertaking activity like watching television, planning to beach, or picnic within the park. They actually doing same thing every week. Do you feel it? Would you like to something different to fill your own free time/ holiday? Could be reading a book could be option to fill your free time/ holiday. The first thing you will ask may be what kinds of guide that you should read. If you want to attempt look for book, may be the e-book untitled A Concise Introduction to Geometric Numerical Integration (Monographs and Research Notes in Mathematics) can be good book to read. May be it could be best activity to you.

Duane Vega:

Playing with family in a very park, coming to see the coastal world or hanging out with friends is thing that usually you might have done when you have spare time, in that case why you don't try point that really opposite from that. Just one activity that make you not experiencing tired but still relaxing, trilling like on roller coaster you are ride on and with addition of information. Even you love A Concise Introduction to Geometric Numerical Integration (Monographs and Research Notes in Mathematics), it is possible to enjoy both. It is great combination right, you still would like to miss it? What kind of hang-out type is it? Oh come on its mind hangout men. What? Still don't have it, oh come on its referred to as reading friends.

Ronald Tanaka:

Reserve is one of source of expertise. We can add our expertise from it. Not only for students but in addition native or citizen want book to know the change information of year in order to year. As we know those textbooks have many advantages. Beside we all add our knowledge, also can bring us to around the world. With the book A Concise Introduction to Geometric Numerical Integration (Monographs and Research Notes in Mathematics) we can consider more advantage. Don't you to be creative people? Being creative person must like to read a book. Only choose the best book that acceptable with your aim. Don't always be doubt to change your life by this book A Concise Introduction to Geometric Numerical Integration (Monographs and Research Notes in Mathematics). You can more inviting than now.

**Download and Read Online A Concise Introduction to Geometric
Numerical Integration (Monographs and Research Notes in
Mathematics) Sergio Blanes, Fernando Casas #DJGRV6E8TCY**

Read A Concise Introduction to Geometric Numerical Integration (Monographs and Research Notes in Mathematics) by Sergio Blanes, Fernando Casas for online ebook

A Concise Introduction to Geometric Numerical Integration (Monographs and Research Notes in Mathematics) by Sergio Blanes, Fernando Casas Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read A Concise Introduction to Geometric Numerical Integration (Monographs and Research Notes in Mathematics) by Sergio Blanes, Fernando Casas books to read online.

Online A Concise Introduction to Geometric Numerical Integration (Monographs and Research Notes in Mathematics) by Sergio Blanes, Fernando Casas ebook PDF download

A Concise Introduction to Geometric Numerical Integration (Monographs and Research Notes in Mathematics) by Sergio Blanes, Fernando Casas Doc

A Concise Introduction to Geometric Numerical Integration (Monographs and Research Notes in Mathematics) by Sergio Blanes, Fernando Casas Mobipocket

A Concise Introduction to Geometric Numerical Integration (Monographs and Research Notes in Mathematics) by Sergio Blanes, Fernando Casas EPub