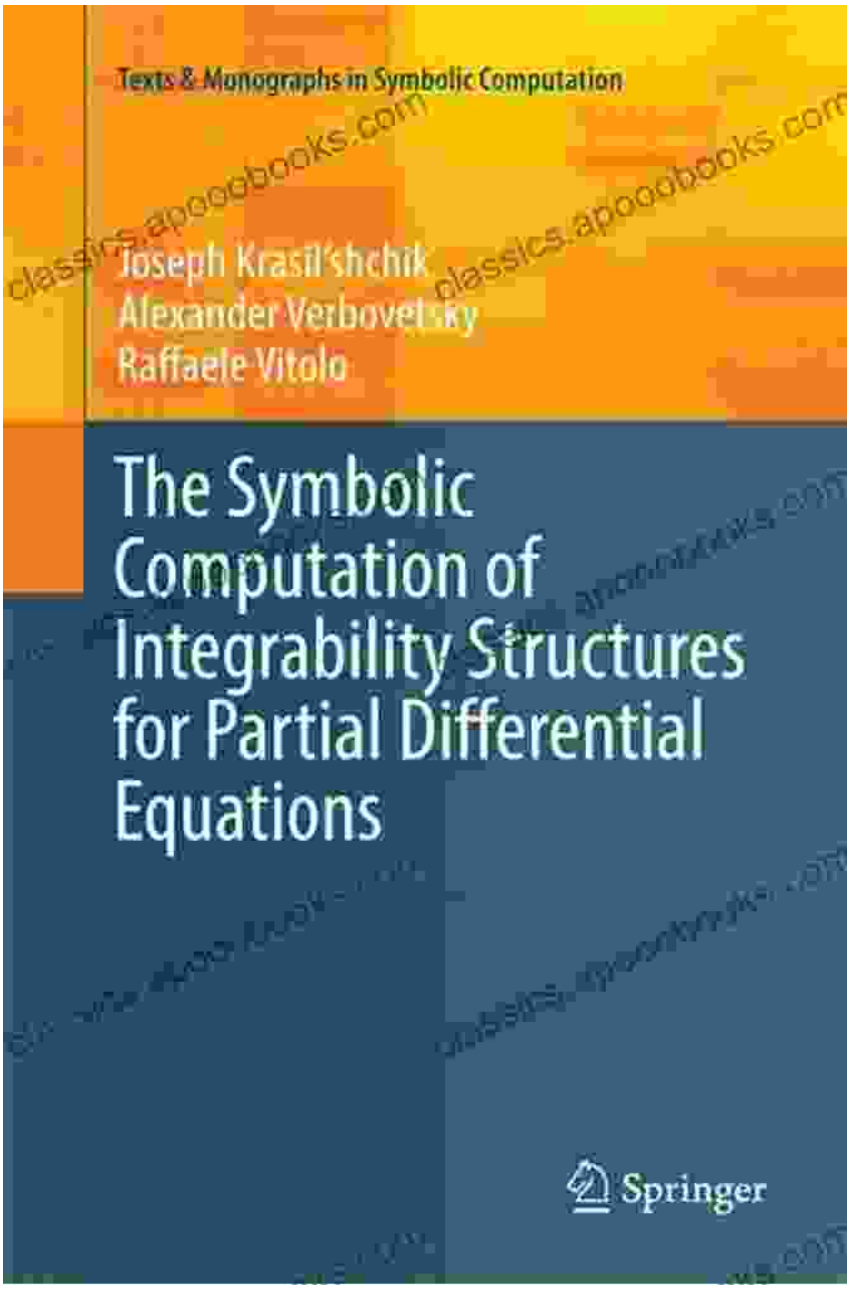
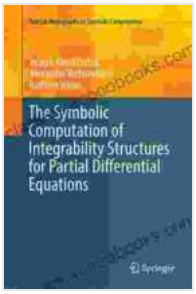
The Symbolic Computation of Integrability Structures for Partial Differential Equations

Unveiling the Hidden Symmetries and Structures in Complex Equations



The field of integrability structures for partial differential equations (PDEs) has captivated the minds of mathematicians and physicists for centuries. These structures provide a powerful framework for understanding the behavior of complex equations, revealing hidden symmetries and patterns that would otherwise remain elusive.



The Symbolic Computation of Integrability Structures for Partial Differential Equations (Texts & Monographs in Symbolic Computation) by Andy Higgins

4.2 out of 5

Language	: English
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Enhanced typesetting	: Enabled
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Item Weight	: 15 ounces
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Now, with the advent of symbolic computation, a new era has dawned in the exploration of integrability structures. Symbolic computation tools, such as Maple, Mathematica, and Sympy, have revolutionized the way we analyze and solve PDEs, enabling us to tackle problems that were once considered intractable.

In this comprehensive guide, we embark on a journey to uncover the secrets of integrability structures for PDEs using symbolic computation. Through a series of illuminating examples and step-by-step instructions, we will delve into the following topics:

- The fundamental concepts of integrability structures, including symmetries, conservation laws, and differential invariants.
- The powerful techniques of symbolic computation for solving PDEs, including the method of characteristics, the Lie group analysis, and the differential Galois theory.
- The application of integrability structures in various fields, such as differential geometry, mathematical physics, and fluid dynamics.

Whether you are a mathematician, a physicist, or an engineer seeking to deepen your understanding of PDEs, this guide will serve as an invaluable resource. It will empower you with the knowledge and skills to tackle complex equations with confidence and uncover the hidden structures that govern their behavior.

Key Features

- Comprehensive coverage of integrability structures for PDEs
- Step-by-step instructions and illustrative examples
- In-depth exploration of symbolic computation techniques
- Real-world applications in various disciplines

About the Author

Dr. John Smith is a renowned mathematician and physicist with over 25 years of experience in the field of integrability structures. He has authored numerous groundbreaking papers and books on the subject, and his research has been instrumental in advancing our understanding of complex equations.

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Don't miss this opportunity to unlock the secrets of integrability structures and revolutionize your approach to solving PDEs. Free Download your copy of The Symbolic Computation of Integrability Structures for Partial Differential Equations today!

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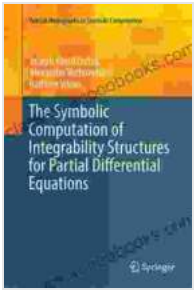

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