

1. Record Nr.	UNINA9910280950603321
Autore	Krasil'shchik Joseph
Titolo	The Symbolic Computation of Integrability Structures for Partial Differential Equations // by Joseph Krasil'shchik, Alexander Verbovetsky, Raffaele Vitolo
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2017
ISBN	3-319-71655-7
Edizione	[1st ed. 2017.]
Descrizione fisica	1 online resource (272 pages)
Collana	Texts & Monographs in Symbolic Computation, A Series of the Research Institute for Symbolic Computation, Johannes Kepler University, Linz, Austria, , 0943-853X
Disciplina	515.353
Soggetti	Difference equations Functional equations Computer science—Mathematics Difference and Functional Equations Math Applications in Computer Science Symbolic and Algebraic Manipulation
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction -- Computational problems in the geometry of PDEs -- Old and new Reduce software for integrability of PDEs -- Internal coordinates and total derivatives -- Conservation laws and nonlocal variables -- Cosymmetries -- Symmetries -- The tangent covering -- Recursion operators for symmetries -- Variational symplectic structures -- Cotangent covering -- Variational Poisson structures -- Recursion operators for cosymmetries -- The Plebanski equation -- Discussion.
Sommario/riassunto	This is the first book devoted to the task of computing integrability structures by computer. The symbolic computation of integrability operator is a computationally hard problem and the book covers a huge number of situations through tutorials. The mathematical part of the book is a new approach to integrability structures that allows to treat all of them in a unified way. The software is an official package of

Reduce. Reduce is free software, so everybody can download it and make experiments using the programs available at our website.
