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	Titolo	Geospatial Algebraic Computations : Theory and Applications / / by Joseph Awange, Béla Paláncz
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	ISBN	3-319-25465-0
	Edizione	[3rd ed. 2016.]
	Descrizione fisica	1 online resource (548 p.)
	Disciplina	550
	Soggetti	Geophysics
		Computer science - Mathematics
		Civil engineering
		Computer science—Mathematics
		Numerical analysis
		Geophysics/Geodesy
		Computational Mathematics and Numerical Analysis
		Civil Engineering
		Symbolic and Algebraic Manipulation
		Numeric Computing
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Note generali	Description based upon print version of record.
	Nota di bibliografia	Includes bibliographical references and index.
	Nota di contenuto	Part I Algebraic symbolic and numeric methods -- Basics of Ring Theory -- Basics of Polynominal Theory -- Groebner Basis -- Polynominal Resultants -- Linear and Nonlinear Homotpy -- Solutions of Overdetermined Systems -- Extended Newton-Raphson method -- Procrustes Solution -- EIV models and Pareto Optimality.-Symbolic Regression -- Robust Estimation -- Part II Applications to geodesy and geoinformatics -- LPS-GNSS Orientations and vertical Deflections -- Cartesian to Ellipsoidal Mapping -- Positioning by Ranging.-Positioning by resection Methods -- Positioning by intersection Methods -- GNSS Environmental Monitoring -- Algebraic Diagnosis of Outliers -- Datum Transformation Problems -- Appendix -- References -- Index.
	Sommario/riassunto	Improved geospatial instrumentation and technology such as in laser scanning has now resulted in millions of data being collected, e.g.,

point clouds. It is in realization that such huge amount of data requires efficient and robust mathematical solutions that this third edition of the book extends the second edition by introducing three new chapters: Robust parameter estimation, Multiobjective optimization and Symbolic regression. Furthermore, the linear homotopy chapter is expanded to include nonlinear homotopy. These disciplines are discussed first in the theoretical part of the book before illustrating their geospatial applications in the applications chapters where numerous numerical examples are presented. The renewed electronic supplement contains these new theoretical and practical topics, with the corresponding Mathematica statements and functions supporting their computations introduced and applied. This third edition is renamed in light of these technological advancements.