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Autore	Awange Joseph
Titolo	Geospatial Algebraic Computations : Theory and Applications // by Joseph Awange, Béla Paláncz
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2016
ISBN	3-319-25465-0
Edizione	[3rd ed. 2016.]
Descrizione fisica	1 online resource (548 p.)
Disciplina	550
Soggetti	Geophysics Mathematics - Data processing Civil engineering Computer science - Mathematics Numerical analysis Computational Mathematics and Numerical Analysis Civil Engineering Symbolic and Algebraic Manipulation Numerical Analysis
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.

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