1. Record Nr.   UNINA9910437903703321

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   Titolo   Newtonian nonlinear dynamics for complex linear and optimization
                       problems / / Luis Vazquez, Salvador Jimenez

   Pubbl/distr/stampa   New York, : Springer, 2013

   ISBN   1-283-91078-0
                       1-4614-5912-5

   Edizione   [1st ed. 2013.]

   Descrizione fisica 1 online resource (145 p.)

   Collana   Nonlinear systems and complexity

   Altri autori (Persone) JimenezSalvador

   Disciplina   531.01/515

   Soggetti   Mechanics
                       Differential equations, Linear

   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   Elements of Newtonian Mechanics -- Solution of Systems of Linear
                       Equations -- Linear Systems: Numerical Simulations -- Eigenvalue
                       Problems -- Eigenvalue Problems: Numerical Simulations -- Linear
                       Programming -- Quadratic Programming.

   Sommario/riassunto Newtonian Nonlinear Dynamics for Complex Linear and Optimization
                       Problems explores how Newton's equation for the motion of one
                       particle in classical mechanics combined with finite difference methods
                       allows creation of a mechanical scenario to solve basic problems in
                       linear algebra and programming. The authors present a novel, unified
                       numerical and mechanical approach and an important analysis method
                       of optimization. This book also: Presents mechanical method for
                       determining matrix singularity or non-independence of dimension and
                       complexity Illustrates novel mathematical applications of classical
                       Newton's law Offers a new approach and insight to basic, standard
                       problems Includes numerous examples and applications Newtonian
                       Nonlinear Dynamics for Complex Linear and Optimization Problems is
                       an ideal book for undergraduate and graduate students as well as
                       researchers interested in linear problems and optimization, and
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