Record Nr. UNINA9910254643903321 Autore Timberlake Todd Keene **Titolo** Classical Mechanics with Maxima [[electronic resource] /] / by Todd Keene Timberlake, J. Wilson Mixon New York, NY:,: Springer New York:,: Imprint: Springer,, 2016 Pubbl/distr/stampa **ISBN** 1-4939-3207-1 Edizione [1st ed. 2016.] Descrizione fisica 1 online resource (XI, 258 p. 156 illus.) Collana Undergraduate Lecture Notes in Physics, , 2192-4791 Disciplina 531.028553 Soggetti **Physics** Mathematical physics Mechanics Algebra Computer mathematics Mathematical Methods in Physics Mathematical Applications in the Physical Sciences Classical Mechanics General Algebraic Systems Computational Mathematics and Numerical Analysis Lingua di pubblicazione Inglese **Formato** Materiale a stampa Monografia Livello bibliografico Note generali Includes index. Introduction to Maxima -- Numerical Methods -- Newton's Laws of Nota di contenuto Motion -- Dynamics of Single Particles -- Oscillators -- Nonlinear Mechanics and Chaos. Sommario/riassunto This book guides undergraduate students in the use of Maxima—a computer algebra system—in solving problems in classical mechanics. It functions well as a supplement to a typical classical mechanics textbook. When it comes to problems that are too difficult to solve by hand, computer algebra systems that can perform symbolic mathematical manipulations are a valuable tool. Maxima is particularly attractive in that it is open-source, multiple-platform software that students can download and install free of charge. Lessons learned and capabilities developed using Maxima are easily transferred to other,

proprietary software.