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Titolo	Neoclassical Physics // by Mark A. Cunningham
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Descrizione fisica	1 online resource (XXV, 375 p. 159 illus.)
Collana	Undergraduate Lecture Notes in Physics, , 2192-4791
Disciplina	530.15
Soggetti	Field theory (Physics) Physics Mathematical physics Classical and Continuum Physics Mathematical Methods in Physics Numerical and Computational Physics, Simulation Mathematical Applications in the Physical Sciences
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Bibliographic Level Mode of Issuance: Monograph
Nota di contenuto	Introduction -- On the Motion of Planets -- On the Nature of Matter -- On the Nature of Spacetime -- More on the Nature of Matter -- Terrestrial Mechanics -- Celestial Mechanics -- Constituents of the Atom -- The Classical Electron -- Modern Technology -- Emergent Phenomena -- Appendix A. Vectors and Matrices -- Appendix B. Noether's Theorem -- Index.
Sommario/riassunto	In this introductory text, physics concepts are introduced as a means of understanding experimental observations, not as a sequential list of facts to be memorized. The book is structured around the key scientific discoveries that led to much of our current understanding of the universe. Numerous exercises are provided that utilize Mathematica software to help students explore how the language of mathematics is used to describe physical phenomena. Topics requiring quantum mechanics for a more complete explanation are identified but not pursued. In a departure from the traditional methodology and subject matter used in introductory physics texts, this is organized in a manner that will facilitate a guided discovery style of instruction. Students will

obtain much more detailed information about fewer topics and will also gain proficiency with Mathematica, a powerful tool with many potential uses in subsequent courses.

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