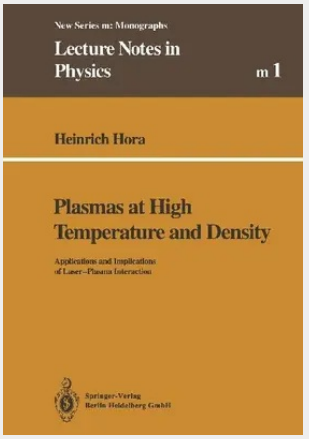
Hora

Plasmas at High Temperature and Density

Applications and Implications of Laser-Plasma Interaction



"New physics" is an appealing new keyword, not yet devalued by the ravages of inflation. But what has this to do with such an ugly field as plasma physics, steeped in classical physics, mostly outworn, with all its unsolved and ambiguous technological problems and its messy and open ended numerical studies? "New physics" is concerned with quarks, Higgs particles, grand unified theory, super strings, gravitational waves, and the profound basics of cosmology and black holes. It is the field of astonishing quantum effects, demonstrated by the von Klitzing effect and high temperature superconductors. But what can plasma physicists offer, after so many years of expensive and frustrating research to solve the problem of fusion energy? One may suggest that the fascinating research ofchaos with applications to plasma, or the achievements of statistical mechanics applied to plasmas, has something to offer and should be the subject of attention. However, this is not the aim of this book. Complementing the traditional aim of physics, which is to interpret the phenomena of nature by generalizing laws such that exact predictions about new properties and effects can be drawn, this book demonstrates how new physics has been derived over the last 30 years from the state of matter which exists at high temperatures (plasma).

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