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Sinopsis

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Classical mechanics is the study of the motion of particles and rigid bodies under the influence of given forces. It applies to the enormous range of motions between the atomic scale, where quuantum effects dominate, and the cosmological scale, where general relativity provides the framework. Coupled with classical electromagnetic theory it provides the basis for sophisticated technologies such as plasmaphysis, accelerator design, space technology and more.

In this edition, the author have included the fundamental subjects of Lagrangian mechanic, Hamiltonian mechanics, regid-body motion, action-angle variables, perturbation theory, and motion with speeds approaching that of light, showing how this theories can be applied to a variety of problems. They treat central motion, the motion of planets and satellites, in detail. They also develop the theory of small vibrations governing resonant systems of all kinds, analyze the motion of particles in high energy accelrators and describe the motion of spinning systems, important for space technology. Nonstandard topics like the Navier-Stokes equation and the inverted pendulum are included.

A number of exercises are provided and most chapters contain references to relevant books and other literature.