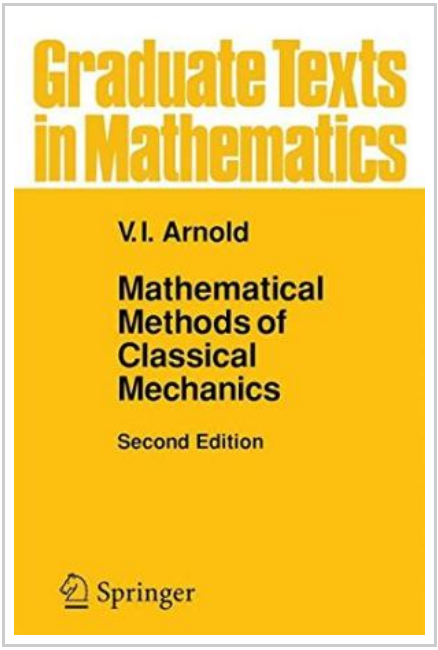

Mathematical Methods of Classical Mechanics

By Arnold, Vladimir I.

Book Condition: New. Publisher/Verlag: Springer, Berlin | In this text, the author constructs the mathematical apparatus of classical mechanics from the beginning, examining all the basic problems in dynamics, including the theory of oscillations, the theory of rigid body motion, and the Hamiltonian formalism. This modern approch, based on the theory of the geometry of manifolds, distinguishes iteself from the traditional approach of standard textbooks. Geometrical considerations are emphasized throughout and include phase spaces and flows, vector fields, and Lie groups. The work includes a detailed discussion of qualitative methods of the theory of dynamical systems and of asymptotic methods like perturbation techniques, averaging, and adiabatic invariance. | I Newtonian Mechanics.- 1 Experimental facts.- 2 Investigation of the equations of motion.- II Lagrangian Mechanics.- 3 Variational principles.- 4 Lagrangian mechanics on manifolds.- 5 Oscillations.- 6 Rigid bodies.- III Hamiltonian Mechanics.- 7 Differential forms.- 8 Symplectic manifolds.- 9 Canonical formalism.- 10 Introduction to perturbation theory.- Appendix 1 Riemannian curvature.- Appendix 2 Geodesics of left-invariant metrics on Lie groups and the hydrodynamics of ideal fluids.- Appendix 3 Symplectic structures on algebraic manifolds.- Appendix 4 Contact structures.- Appendix 5 Dynamical systems with symmetries.- Appendix 6 Normal forms of quadratic hamiltonians.- Appendix 7 Normal...

Reviews

The most effective ebook i at any time study. It can be writter in easy words and phrases and not difficult to understand. I am just pleased to let you know that this is the finest publication i have read within my individual lifestyle and could be he finest publication for at any time.

-- ***Tania Mosciski***

Simply no phrases to describe. It is amongst the most awesome pdf we have read through. Your life period will probably be transform as soon as you complete looking over this publication.

-- ***Torrance Skiles***