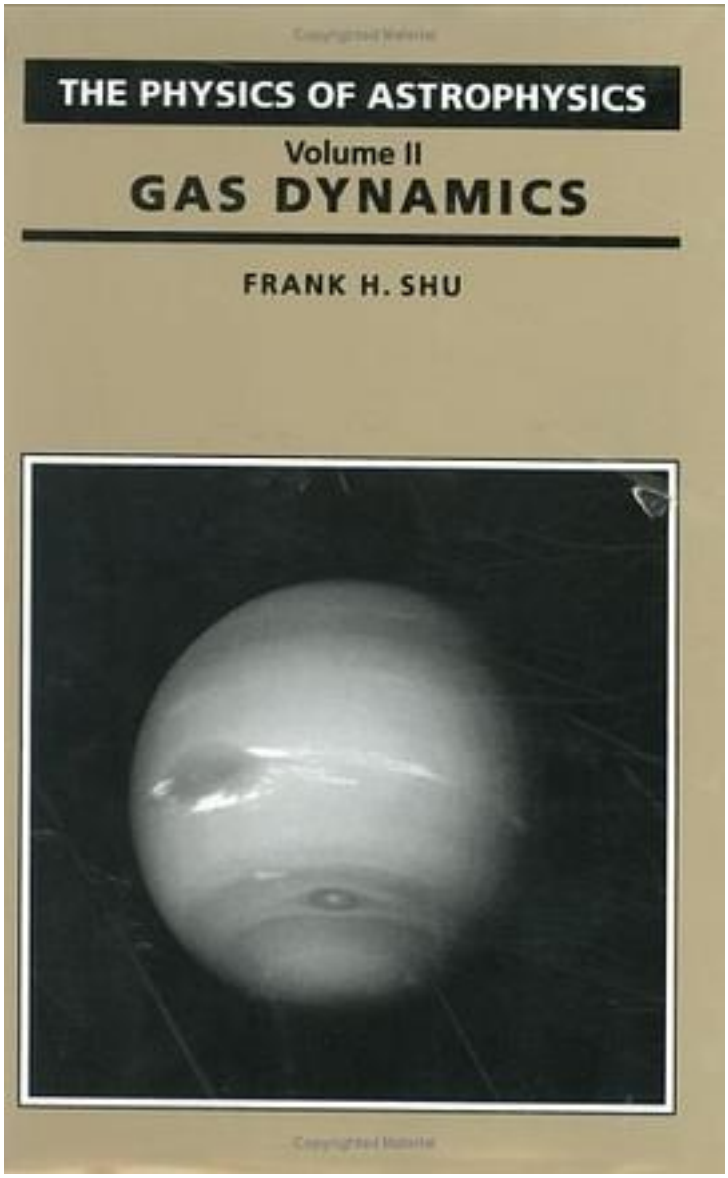
The Physics of Astrophysics



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This two-volume text is for new graduates on astronomy courses who need to get to grips with the physics involved in the subject. Four problem sets, averaging three problems per set, accompany each volume. The problems expand on the material covered in the texts and represent the level of calculational skill needed to write scientific papers in contemporary astrophysics. Volume I. "Radiation" deals with the emission, absorption, and scattering of radiation by matter, radiative transfer, statistical physics, classical electrodynamics, and atomic and molecular structure. Volume II. "Gas Dynamics", is a self-contained textbook. It can be used as the text for a one semester course on the interactions of matter and radiation and electromagnetic fields of macroscopic scale in both the strongly collisionil and collisionless regimes. It covers single-fluid shocks, and fronts; mapetohydrodynamics and plasma physics, their applications to self-graviting spherical masses, accretion disks, spiral density waves, star formation, and dynamo theory. Over 200 photos, line drawings, and tables amplify the major points of the text.

作者介绍:

Frank Shu is a Professor of Astronomy at the University of California, Berkeley. He received his PhD from Harvard University in 1968. Shu has written a number of expository articles for the lay public, and is the author of a best-selling introductory textbook in astronomy and astrophysics, The Physical Universe. He is a member of the U.S. National Academy of Sciences and Academia Sinica.

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