



An Introduction to Magnetohydrodynamics (Cambridge Texts in Applied Mathematics)

By P. A. Davidson

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Magnetic fields are routinely used in industry to heat, pump, stir and levitate liquid metals. There is the terrestrial magnetic field that is maintained by fluid motion in the earth's core, the solar magnetic field, which generates sunspots and solar flares, and the galactic field that influences the formation of stars. This introductory text on magnetohydrodynamics (MHD) (the study of the interaction of magnetic fields and conducting fluids) is intended to serve as an introductory text for advanced undergraduates and graduate students in physics, applied mathematics and engineering. The material in the text is heavily weighted toward incompressible flows and to terrestrial (as distinct from astrophysical) applications. The final sections of the text, which outline the latest advances in the metallurgical applications of MHD, make the book of interest to professional researchers in applied mathematics, engineering and metallurgy.

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