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Sommario/riassunto	Astronomical jets are key astrophysical phenomena observed in gamma-ray bursts, active galactic nuclei or young stars. Research on them has largely occurred within the domains of astronomical observations, astrophysical modeling and numerical simulations, but the recent advent of high energy density facilities has added experimental control to jet studies. Front-line research on jet launching and collimation requires a highly interdisciplinary approach and an elevated level of sophistication. Bridging the gaps between pure magnetohydrodynamics, thermo-chemical evolution, high angular resolution spectro-imaging and laboratory experiments is no small matter. This volume strives to bridge those very gaps. It offers a series

of lectures which, taken as whole, act as a thorough reference for the foundations of this discipline. These lectures address the following: · laboratory jets physics from laser and z-pinch plasma experiments, · the magnetohydrodynamic theory of relativistic and non-relativistic stationary jets, · heating mechanisms in magnetohydrodynamic jets, from the solar magnetic reconnection to the molecular shock heating perspectives, · atomic and molecular microphysics of jet shocked material. In addition to the lectures, the book offers, in closing, a presentation of a series of observational diagnostics, thus allowing for the recovery of basic physical quantities from jet emission lines.