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Sommario/riassunto

This book presents the first comprehensive, interdisciplinary review of the rapidly developing field of air lasing. In most applications of lasers, such as cutting and engraving, the laser source is brought to the point of service where the laser beam is needed to perform its function. However, in some important applications such as remote atmospheric sensing, placing the laser at a convenient location is not an option. Current sensing schemes rely on the detection of weak backscattering of ground-based, forward-propagating optical probes, and possess limited sensitivity. The concept of air lasing (or atmospheric lasing) relies on the idea that the constituents of the air itself can be used as an active laser medium, creating a backward-propagating, impulsive, laser-like radiation emanating from a remote location in the atmosphere. This book provides important insights into the current state of development of air lasing and its applications.
