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Sommario/riassunto	This book presents a comprehensive description of the physics of free-electron lasers starting from the fundamentals and proceeding through detailed derivations of the equations describing electron trajectories, and spontaneous and stimulated emission. Linear and nonlinear analyses are described, as are detailed explanations of the nonlinear simulation of a variety of configurations including amplifiers, oscillators, self-amplified spontaneous emission, high-gain harmonic

generation, and optical klystrons. Theory and simulation are anchored using comprehensive comparisons with a wide variety of experiments.