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This book is the second part of the trilogy *Unified Electromagnetic Theory of Matter and Light*. It develops a structural model of electromagnetic radiation in which light is represented by coherent electromagnetic-wave structures possessing finite transverse dimensions, energy, and momentum. The discussion begins with the physical organization of electromagnetic waves, proceeds to their stability, coupling, and interaction with matter, and finally examines their inertia and propagation through gravitational fields. The four interconnected articles progressively extend the proposed electromagnetic framework from the internal structure of light to its observable interactions with matter and external fields.

Part B1 — Electromagnetic Structure of Light

This article introduces a structural interpretation of light as coherent electromagnetic-wave configurations. It examines the organization of electric and magnetic fields, the formation of longitudinal wave chains, and the transfer of energy within these structures. The proposed model establishes a physical basis for the subsequent analysis of wave stability and interaction.

Part B2 — Stability, Coupling, and Dimensions of Electromagnetic Waves

This article investigates the stability and transverse dimensions of coherent electromagnetic waves. It examines field coupling, radial electromagnetic stresses, energy redistribution, and the conditions governing structural expansion or contraction. The resulting relationships connect electromagnetic-wave energy with its characteristic geometry and stability.

Part B3 — Electromagnetic Interaction in the Photoelectric Effect

This article examines the interaction between structured electromagnetic waves and atomic electrons. It explores energy transfer through electric fields and displacement currents, the role of interaction time, and the conditions required for electron emission. The proposed mechanism provides a structural electromagnetic interpretation of the photoelectric effect.

Part B4 — Electromagnetic Wave Inertia, Structural Evolution, and Gravitational Deflection

This article extends the electromagnetic-wave model to energy and momentum transfer, structural attenuation, and gravitational interaction. It relates wave inertia to electromagnetic energy and examines two proposed mechanisms of solar light deflection: direct gravitational interaction and geometrical wavefront deformation. The analysis connects these mechanisms with astronomical measurements and identifies opportunities for further experimental testing.