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Autore	Harmuth Henning F
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; 4 Quantization of the Pure Radiation Field
4.1 Radiation Field in Extended Lorentz Gauge
4.2 Simplification of Aev(C 0) and Amv(C 0)
; 4.3 Hamilton Function for Planar Wave ;
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Exponential Ramp Function Excitation ;
4.6 Excitation With Rectangular Pulse
5 Klein-Gordon Equation and Vacuum Constants

Sommario/riassunto

Divergencies in quantum field theory referred to as "infinite zero-point energy" have been a problem for 70 years. Renormalization has always been considered an unsatisfactory remedy. In 1985 it was found that Maxwell's equations generally do not have solutions that satisfy the causality law. An additional term for magnetic dipole currents corrected this shortcoming. Rotating magnetic dipoles produce magnetic dipole currents, just as rotating electric dipoles in a material like barium titanate produce electric dipole currents. Electric dipole currents were always part of Maxwell's equations.