CONTENTS

Pre	eface	ix	
Fu	ture c	xi	
Fo	rewor	xv	
Lis	t of fr	xvii	
1	Intr	oduction	1
	1.1	Maxwell's Equations with Magnetic Dipole Currents	, 1
	1.2	Lagrange Function	9
	1.3	Basic Concepts of the Calculus of Finite Differences	15
	1.4	Finite Differences and Spatial Dimensions	22
	1.5	Curved Space in a Difference Theory	37
2	Мо	47	
	2.1	Differential Equation with Magnetic Current Density	47
	2.2	Modified Dirac Difference Equation	58
	2.3	Solution of the Difference Equation for Ψ_{x0}	68
	2.4	Time Variation of $\Psi_{01}(\zeta, heta)$	79
	2.5	Hamiltonian Formalism and Quantization	91
	2.6	Finite Limit of the Period Number κ	99
3	Inh	108	
	3.1	Inhomogeneous Equation (2.2-33)	108
	3.2	Resolution $\Delta x \ll h/m_0 c$	115
	3.3	Quantization of the Solution	132
	3.4	Evaluation of the Energy $\hat{\mathcal{U}}$ for Small	
		Distances $\Delta_{\mathcal{X}}$	140

Equations are numbered consecutively within each of Sections 1.1 to 6.11. Reference to an equation in a different section is made by writing the number of the section in front of the number of the equation, e.g., Eq.(1.1-45) for Eq.(45) in Section 1.1.

Illustrations are numbered consecutively within each section, with the number of the section given first, e.g., Figure 1.1-1.

References are listed by the name of the author(s), the year of publication, and a lowercase Latin letter if more than one reference by the same author(s) is listed for that year.

4	D	irac Difference Equation in Spherical Coordinates	158
	4.1		
	4.2		158
	4.3		163
	4.4		171
	4.5		179 184
	4.6		190
	4.7		201
	4.8	Energy or Mass Ratios for ${\sf E}/m_0c^2{>}1$ and $\Delta r_{\sf min}$	210
5	Inl	nomogeneous Equations for Coulomb Potential	222
	5.1	Quantization of the Inhomogeneous Term	222
	5.2	Separation of the Functions $\Psi_{1j}(ho, heta)$	232
	5.3	Solutions for $v(heta)$ and $w(ho)$	235
6	Ap	241	
	6.1	Calculations for Section 2.3	
	6.2	Calculations for Section 3.2	241
	6.3	Inhomogeneous Difference Equations	243 247
	6.4	Further Elaboration of Eq.(2.1-28)	247 258
	6.5	Quantization of \mathcal{L}_{cr2} to $\mathcal{L}_{carphi5}$	260
	6.6	Polynomials as Solutions of Difference Equations	200
	6.7	of Second Order	262
	6.8	Separation of Variables in Section 4.3	271
	6.9	Solution of $\chi_1(\rho)$ and $\chi_4(\rho)$	279
	6.10	Calculation of C_{1V} and C_{4V} in Section 6.7	293
	6.11	Slanted Coordinate Systems With Finite Differences	299
	0.11	Riemann Manifolds and Bended Eigen-Coordinates	301
Ref	EREN	CES AND BIBLIOGRAPHY	310
IND	EX		316