CONTENTS

Preface to the American	1 Edition	3
What is this book about? What does the author claim on? Introductory information PART I IHE INITIAL PARADIGM. MATHEMATICAL AND PHYSICAL FUNDAMENTALS OF THE THEORY I. The statement of the problem, substantiation of the initial principles, analysis and definition of the principal concepts I.1. The transition from the scale of ranks of quantum objects in modern physics to the system of discrete structures of matter in TFF I.2. The unified theory of field I.3. On the internal structure of elementary particles I.4. Determinism and quantum properties of EPs I.5. Physical vacuum I.6. Tachyons I.7. Black holes in mega- and microcosm		8
		10
PART I		
THE INITIAL PARAD	DIGM. MATHEMATICAL	
AND PHYSICAL FUN	DAMENTALS OF THE THEORY	
The statement of th	e problem, substantiation of the initial principles	
. 청사하장 관리 선생님 아이들의 지하게 하는 것이 없는데 다 있다고 !	non of the	13
1.1. The trans	ition from the scale of ranks of quantum objects	
	and the same of the same of the first of the same of	
of discrete	structures of matter in TFF	13
1.2. The unifie	ed theory of field	19
		20
1.4. Determini	ism and quantum properties of EPs	21
		23
		24
		25
	space-time-matter	26
	limensional spaces and fiber bundles	29
Resume		29
2. Paradigm for the in	vestigation of viable and developing systems	
is the methodologic	al and mathematical	
basis for construction	on of TFF and a number of other theories	31
	ion of the problem	31
2.2. Papers an	d facts which can be laid down in the basis of the paradigm	31
2.3. Fundame	ntals of the paradigm	32

3.	On the use of heuristic possibilities of modern mathematics.					
	Peculiarit	ies of mathematical apparatus of the theory	36			
	3.1.	The statement of the problem	36			
	3.2.	Formulation of the problem	36			
	3.3.	The mathematical basis of the description of the spatial				
		metamorphosis phenomenon	37			
4.	Construction of the diagram characterizing all spaces describing the matter in TFF					
	4.1.	The first chain of commutativity at the level of OSS, VSS and 3SS	44			
		The chain of embeddings G_7 and G_8 and the mapping F_7	49			
	4.3.	The mappings F_6 , F_3 and the embedding G_8	51			
	4.4.	The chains of mappings F_4 , F_6 and the embedding G_9	51			
	4.5.	The chain of embeddings G_9 and G_{10} and the mapping F_8	52			
		The embeddings of elements	53			
	4.7.	Construction of ES2	54			
	4.8.	Construction of ES3	54			
	4.9.	Construction of ES1 and the chain of mappings	55			
	4.10.	Construction of ESM and corresponding embeddings	57			
5.	Transition from the space-time to structural elements of material					
	forms (to	the matter)	60			
	5.1.	General formulation of the problem and the principal ideas	60			
	5.2.	The first step. Realization of the idea of interpretation of the Null space.				
		Deduction of the equation for the scalar component of the				
		fundamental field	62			
	5.3.	The second step. Complexification as a transition from the processes				
		occurring in the fiber and the base to the processes observable in the				
		enclosing space	69			
		The third step. Unification of both the space-time and matter properties	1000000			
		in the Triunity Law	72			
	5.5.	The fourth step. From TL to the structure of fundamental particles of				
		matter in all mutually consistent subspaces	82			
		The fifth step. Calculation of internal parameters of BEPs	88			
	5.7.	The sixth step. Quark structures in TFF	118			
6.	Resume		14			

PART II THE PRINCIPAL EQUATIONS OF THE THEORY AND THEIR SOLUTIONS

7.	The Triunity Law of the space-time-matter		
8.	How TFF explains the origination of spinorial and vectorial fields	152	
9.	Quantum and relativistic properties of matter structures	157	
	9.1. Principal equations	157	
	9.2. The structure of the torus as the fiber bundle in 3SS	163	
	9.3. The origination of <i>n</i> particles instead of one, under the transition	166	
	into another subspace		
10	O. The Noether theorem in TFF	172	
	Resume	174	
	ART III HEORY OF INTERACTIONS IN MATTER		
11	Gravitational interaction	176	
12	2. Features of field interactions of particles	184	
13	3. Calculation of particles precession in the calculation subspace	188	
	13.1. The principal formulae and the calculation scheme	188	
	13.2. The apparent formulae	192	
	13.3. Reduction to ordinary dimension	193	
	13.4. How the calculation changes in the case of a strong field	196	
	13.5. Calculation of precession vector components in an apparent way	197	
14	4. Features of fundamenton structure in TFF	201	
	14.1. Motion of fundamenton in 3SS	201	
	14.2. Dynamics of fundamenton motion and calculation of its parameters	202	
15	5. Exact theoretical calculation of all global constants in TFF	210	
	Resume		

PART IV THEORETICAL COMPUTER CALCULATION OF ALL PARAMETERS OF ELEMENTARY PARTICLES

tion o	f the calculation formulae	224
.1.	Formulation of the problem	224
.2.	The calculation formulae for the theoretical determination of	
	elementary particles parameters	226
.2.1.	Principal notations and abbreviations	226
.2.2.	Calculation of principal parameters of physical vacuum	230
.2.3.	Determination of the ratio of the fundamental field charges q_2/q_1	233
.2.4.		236
.2.5.	Different formulae for the fine structure constant α and the electric	237
26		239
	[20] [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20) [20] 20 (20)	243
	A CONTRACTOR OF THE PROPERTY O	243
		24.
.2.10	. Determination of principal quantum characteristics of BEPs and EPs	25
	(computer calculation algorithm)	25
		26
and	ound experimentary	
		26
.2. M	ethod of computer comparison of calculated and experimental data	27.
s of ca	alculation of EP internal parameters and their analysis	27
	는 유진 경영 전경에 보면 경영, 투명 1657 (1980 175)에 프로스 제공 교육 (1980 1980 175) 등 기계 프로스 에스크 및 경영 (1980 1980 1980 1980 1980 1980 1980 1980	28
s of i	dentification of theoretically predicted particles with experimental data	29
ie		30
	1. 2. 2. 1. 2. 2. 2. 2. 2. 2. 3. 2. 2. 4. 2. 2. 5. 2. 2. 6. 2. 2. 7. 2. 2. 8. 2. 2. 9. 2. 110 ds of and	 The calculation formulae for the theoretical determination of elementary particles parameters 2.1. Principal notations and abbreviations 2.2. Calculation of principal parameters of physical vacuum 2.3. Determination of the ratio of the fundamental field charges q₂/q₁ 2.4. Determination of the external fundamental charge q₁ and observed electric charge q 2.5. Different formulae for the fine structure constant α and the electric charge of EP 2.6. Determination of particles masses 2.7. Determination of the mechanical moment 2.8. Calculation of the magnetic mement 2.9. Deduction of the formulae for the lifetime of particles 2.10. Determination of principal quantum characteristics of BEPs and EPs 2.11. Summary table of the calculation formulae (computer calculation algorithm) ds of computer calculation and identification of particles predicted by and found experimentally 1. The fundamentals of the logic of comparison of theoretical and experimental data on elementary particles 2. Method of computer comparison of calculated and experimental data is of calculation of EP internal parameters and their analysis d and preliminary results of prediction of particles which could be ed in macrocosm s of identification of theoretically predicted particles with experimental data

PARTV

PYAMDI PS	OPPDACTICAL	USE OF TEF IN DIFFERENT S	SUMBORS

21. Energy	of ph	ysical vacuum and its practical use	305
22. Nature	of hig	th temperature superconductivity. The ways of use	309
		ens of the theory of activation of different media. and methods of use of this phenomenon	314
24. New fac	ts in	the theory of a solid. Possibilities of practical use	334
	_	avity vacuum energy (GVE) in stellar and planetary entrails and of its practical use on the Earth	339
25.	2. Th 3. Th	e complete screening radius e radius of the complete screening domain e conditional loss of the mass when a star (planet) is considered be a screen of its domain in the centre	339 342 344
	Re	sume	347
		enon of gravity anisotropy which has been predicted by TFF. ities of practical use	349
27. Brief re	27. Brief review of spheres of practical use of the theory in biophysics		
28. Basic co	28. Basic computer programs for the correcting phenomenological theories		
Resume	•		356
PART VI SPHERES	OF P	PRACTICAL USE OF THE PARADIGM	
29. Is it pos	sible	to prevent the environmental catastrophe?	357
30. What s	sten	is are viable and able to develop?	362
Appendix Appendix	1. 2.	Correction of a mistake On the possibility to express the ratio $J'_n(n\beta) / J_n(n\beta)$ algebraically	368
Appendix Appendix	3. 4.	in a particular case Crystal model of nucleus On the role of physical vacuum in radioactive nuclei fission	372 375 379
Appendix Appendix	5. 6.	Some considerations concerning several problems of the theory of systems in theoretical physics On relation between inertial and gravitational masses	382 384

Appendix	7.	Fundamental code (Where does Nature keep its fundamental	
		information? Hypothesis)	387
Appendix	8.	Usage of physical vacuum energy under fuel oil activation	393
Appendix	9.	Significance and place of the paradigm for viable and developing	
		systems in the rise of manufacture efficiency	402
Appendix	10.	On the general law of viable and developing social systems	
		in the society	405
Appendix r	esum	е	408
Summary			409
References			415
Abstracts o	f som	e papers correlating with TFF	421
List of table	es		428
List of figur	res		429