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Nota di contenuto	1. Lorentz group and its representations -- 1.1. Generators of the Lorentz group -- 1.2. Two-by-two representation of the Lorentz group -- 1.3. Conformal representation of the Lorentz group -- 1.4. Representations of the Poincare group -- 1.5. Representations of the Lorentz group based on harmonic oscillators -- 1.6. Wigner functions for the Lorentz group 2. Wigner's little groups for internal space-time symmetries -- 2.1. Euler decomposition of Wigner's little group -- 2.2. O(3)-like little group for massive particles -- 2.3. E(2)-like little group for massless particles -- 2.4. O(2, 1)-like little group for imaginary-mass particles -- 2.5. Further properties of Wigner's little groups -- 2.6. Little groups in the light-cone coordinate system 3. Group contractions -- 3.1. Contraction with squeeze transformations -- 3.2. Contractions of the O(3) rotation group -- 3.3. Contraction of the O(2, 1) Lorentz group -- 3.4. Contraction of the Lorentz group -- 3.5. Tangential spheres 4. Two-by-two representations of Wigner's little groups -- 4.1. Transformation properties of the energy-momentum four-vector --

4.2. Two-by-two representations of Wigner's little groups -- 4.3. Lorentz completion of the little groups -- 4.4. Bargmann and Wigner decompositions -- 4.5. Conjugate transformations -- 4.6. One little group with three branches -- 4.7. Classical damped harmonic oscillator

5. Relativistic spinors and polarization of photons and neutrinos -- 5.1. Two-component spinors -- 5.2. Massive and massless particles -- 5.3. Dirac spinors and massless particles -- 5.4. Polarization of massless neutrinos -- 5.5. Scalars, vectors, tensors, and the polarization of photons

6. Lorentz-covariant harmonic oscillators -- 6.1. Dirac's plan to construct Lorentz-covariant quantum mechanics -- 6.2. Dirac's forms of relativistic dynamics -- 6.3. Running waves and standing waves -- 6.4. Little groups for relativistic extended particles -- 6.5. Further properties of covariant oscillator wave functions -- 6.6. Lorentz contraction of harmonic oscillators -- 6.7. Feynman's rest of the Universe

7. Quarks and partons in the Lorentz-covariant world -- 7.1. Lorentz-covariant quark model -- 7.2. Feynman's parton picture -- 7.3. Proton structure function -- 7.4. Proton form factor and Lorentz coherence -- 7.5. Coherence in energy-momentum space -- 7.6. Hadronic temperature and boiling quarks

8. Wigner functions and their symmetries -- 8.1. Symmetries and the uncertainty principle in the Wigner phase space -- 8.2. Four-dimensional phase space -- 8.3. Canonical transformations -- 8.4. $SL(4, \mathbb{R})$ symmetry -- 8.5. Dirac matrices for $O(3, 3)$ -- 8.6. $O(3, 3)$ symmetry

9. Coupled harmonic oscillators and squeezed states of light -- 9.1. Coupled oscillators -- 9.2. Lorentz-covariant oscillators -- 9.3. Squeezed states of light -- 9.4. Further notes on squeezed states -- 9.5. $O(3, 2)$ symmetry from Dirac's coupled oscillators -- 9.6. Canonical and non-canonical transformations from the coupled oscillators -- 9.7. Entropy and the expanding Wigner phase space

10. Special relativity from quantum mechanics? -- 10.1. Definition of the problem -- 10.2. Symmetries of the single oscillator -- 10.3. Symmetries from two oscillators -- 10.4. Contraction of $O(3, 2)$ to the inhomogeneous Lorentz group

11. Lorentz group in ray optics -- 11.1. The group of ABCD matrices applied to ray optics -- 11.2. Equi-diagonalization of the ABCD matrix -- 11.3. Decomposition of the ABCD matrix -- 11.4. Laser cavities -- 11.5. Composition of lens and translation matrices -- 11.6. Optical beam propagation through multilayers -- 11.7. Camera optics

12. Polarization optics -- 12.1. Jones vectors -- 12.2. Squeeze transformation and phase shift -- 12.3. Rotation of the polarization axes -- 12.4. The $SL(2, \mathbb{C})$ group content of polarization optics -- 12.5. Optical activities -- 12.6. Correspondence to space-time symmetries -- 12.7. More optical filters from $E(2)$ -like groups

13. Poincare sphere -- 13.1. Decoherence in polarization optics -- 13.2. Coherency matrix -- 13.3. Poincare sphere -- 13.4. Two concentric Poincare spheres -- 13.5. Symmetries derivable from the Poincare sphere -- 13.6. $O(3, 2)$ symmetry for energy couplings -- 13.7. Entropy problem

Appendix A. Physics as art of synthesis -- A.1. Illustration of Hume, Kant, and Hegel -- A.2. Kant and Einstein -- A.3. Kantianism and Taoism -- A.4. Einstein and Hegel.

Sommario/riassunto

This book explains the Lorentz group in a language familiar to physicists, namely in terms of two-by-two matrices. While the three-dimensional rotation group is one of the standard mathematical tools in physics, the Lorentz group applicable to the four-dimensional Minkowski space is still very strange to most physicists. However, it

plays an essential role in a wide swathe of physics and is becoming the essential language for modern and rapidly developing fields. The first edition was primarily based on applications in high-energy physics developed during the latter half of the 20th Century, and the application of the same set of mathematical tools to optical sciences. In this new edition, the authors have added five new chapters to deal with emerging new problems in physics, such as quantum optics, information theory, and fundamental issues in physics including the question of whether quantum mechanics and special relativity are consistent with each other, or whether these two disciplines can be derived from the same set of equations.
