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Nota di contenuto	The use and ultimate validity of invariance principles -- Cohomology and contraction: The “non-relativistic” limit revisited -- Linearization — A unified approach -- Weyl kinematical groups of electromagnetic and energy-momentum tensors -- From spinors to probability amplitudes of external and internal variables for spinning particles -- A characterizatton of factor systems of locally-operating representations -- Recent developments on shift operators -- Unitary and non-unitary, multiplicity free irreducible representations of SL (3,R) -- The symmetry group of a differential equation -- Group contractions and the E(2)-like little group for massless particles as an infinite-momentum/zero-mass limit of the O(3)-like little group for massive particles -- Representation approach to lattices of subgroups of space groups -- Young tableaux for the Lie superalgebra OSP(M/N) -- The associated Lie Algebra of $\mathbb{R} \times \mathbb{R} + f_2 \mathbb{R} \cdot \mathbb{R} + f_1 x = f_0$ -- Three-dimensional commutative diagram of group homomorphisms -- Indecomposable representations of Verma type -- Some recent results on the SU(3)? SO (3) state labelling problem -- Irreducible projective representations of

the generalized symmetric groups B_n -- Indecomposable representations of some graded Lie Algebras -- Stephen Paneitz: A brief appreciation -- Indecomposable representations of the Poincare group and associated fields -- $SL(n, \mathbb{R})/SO(n)$ unirreps and group decontraction -- Hysteresis & universal bifurcation in natural processes -- Irreducible representations of the basic classical Lie superalgebras $SU(m/n)$; $SU(n/n)/U(1)$; $OSp(m/2n)$; $D(2/1 ; ?)$; $G(3)$; $F(4)$. -- Group representations in indefinite metric spaces -- Tensor operator realisations of the classical Lie Algebras and non-trivial zeros of the 6j-symbol -- Yang - Baxter algebras of dynamical charges in the chiral gross - Neveu model -- Subgroups of Lie groups and symmetry reduction for nonlinear partial differential equations -- Spinorial description of Lie superalgebras -- Noetherian symmetries, backlund transformation and conservation laws for a completely integrable three dimensional system -- Einstein equations without killing vectors, self-dual Yang-Mills field and non-linear sigma models (integrability properties, links, new solutions) -- Jet bundle technique, Lie Bäcklund vector fields and diffusion equations -- A group-theoretic treatment of Gaussian optics and third-order aberrations -- Study of Michel's conjecture -- Conformally invariant solutions of Yang-Mills equations in Minkowski space -- Two body relativistic scattering with an $O(1,1)$ symmetric square well potential -- Emergence of central extension of Kac-Moody algebra in quantum integrable models -- Cohomological interpretation of anomalies the example of the trace anomaly -- On pure, conformal and exotic spinors -- Pohlmeyer-type transformations in general relativity -- On group covariance and the law of motion in a generalized metric theory -- Minimalization of Higgs potentials with application to the $SU(5)$ model -- Self-dual monopoles and calorons -- $U(1)$ Invariant hierarchy theories in d-dimension antisymmetric gauge tensor fields -- Generalized connection forms with linearized curvature -- Dynamical symmetry breaking in S_4 De Sitter space -- Applications of conformal invariance to gauge Quantum Field Theory -- On the necessity of breaking colour $SUC(3)$ symmetry -- Massive vector superfields with $SU(2)$ internal symmetry -- Supergravity in eleven-dimensional space-time -- Dimensional reduction of exceptional gauge groups and flavor chirality -- Seven - Spheres from octonions -- A solution of Bianchi identities for extended supergravities -- $N=2$ unconstrained superfield supergravity from hypermultiplet -- Euclidean supersymmetries in three and four dimensions -- Gauge theories in higher dimensions: Linear relations for gauge fields, integrability conditions, spherical symmetry in eight dimensions -- Quantum vortices and diff (?) -- The time dependent $Sp(2, ?)$ model for the breathing mode -- The quark structure of nuclei from a group theoretical viewpoint -- Group theoretic approach to spherical anharmonic oscillator -- Operator averages and orthogonalities -- Advances in the theory of collective motion in nuclei -- Quantum effects in classical phase space: Symplectic structures associated to the scattering of nuclear fragments -- Gamow states in momentum representation -- Geometry of nuclear collective motions -- Is it possible to separate the kinetic energy and the velocity field into a collective and an intrinsic part W.R.T. the $GL+(3, \mathbb{R})$ collectivity? -- Computer generated Clebsch-Gordan (C-G) coefficients for space groups -- Automorphism symmetries of space group representations -- Lattices of symmetric groups S_5 and S_6 and exomorphism of group-subgroup relations up to index 6 -- A direct-expansion method for tensor properties of crystals -- Isotropy groups of space groups — A simple method for their determination -- Landau's theory of crystalline phase transitions in a superspace formulation -- Symmetry breaking in

solid state and particle physics -- Counterexamples to the maximality conjecture of Landau-Higgs models -- Some mathematical problems in renormalization group theory -- On the Racah algebra for Shubnikov magnetic groups -- On periodic and non-periodic space fillings of E_m obtained by projection -- Invariants for physically irreducible representations of space groups -- On symmetry aspects of phase transitions with coupled parameters -- Quasisymmetry (P-symmetry) in crystals -- Braid groups and Euclidean Lie algebras in statistical mechanics of spin systems -- Phase coexistence in many-fermion systems -- Mean field renormalization group approach to lattice models -- Linear-antilinear representations of magnetic line groups -- Anderson transition and nonlinear ϕ^4 -model -- Do energy bands in solids have an identity -- Coupling coefficients for the space group of the hexagonal close-packed structure -- Harmonic analysis on phase space and Born's metric for space time -- Generalized Chebyshev polynomials and characters of $GL(N, \mathbb{C})$ and $SL(N, \mathbb{C})$ (fragments of results) -- Tensor operators as an extension of the universal enveloping algebra -- A group-theoretical criterion for an Einstein-Podolsky-Rosen state -- Group theory algebras and bosonization -- $SO(3)$ commutators for angular momentum and rotation observables -- Integrals of motion of nonstationary quantum systems -- Geometric properties of the lowest energy state for a polynomial Hamiltonian -- Groupes différentiels et physique mathématique -- Gauge invariance and canonical transformations in Dirac generalized mechanics.
