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Nota di contenuto	Contents ; Part I Preliminaries ; 1. Foundations ; 1.1 Physics without Objects ; 1.2 Observables ; 1.3 Finite Dimensional Heuristics ; 2. Quantum Sets ; 2.1 Logics and Lattices ; 2.2 Some First-order Quantum Aggregates ; 2.2.1 Finite Products ; 2.2.2 Sequences ; 2.2.3 Sets ; 2.2.4 Sibs 2.3 Quantum Set Theory ; 3. Group Duality Coherence and Cyclic Actions ; 3.1 The Duality of Groups and Hopf Algebras ; 3.1.1 Algebras ; 3.1.2 Coalgebras ; 3.1.3 Bialgebras and Hopf Algebras ; 3.1.4 The Additive Affine Group ; 3.1.5 Finite Group Algebras ; 3.1.6 Topological Hopf and Coalgebras ; 3.1.7 The Algebra of Representative Functions on a Compact Group ; 3.1.8 Tensor Symmetric and Exterior Algebras ; 3.1.9 The Universal Enveloping Algebra of a Lie Algebra ; 3.2 Quantum Versions of Cyclic Groups ; 3.2.1 Quantum Permutations: from $SI(n, \mathbb{C})$ to Z_n

3.2.2 Condensation and Coherence	; 3.2.3
Quantizing Cycles: from Zn to SI(n C)	;
Part II Computational Paradigms	; 4. Natural
Deduction	; 4.1 Natural Deduction for a Minimal
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; 5.1.1 Orthologic as a Deductive System	;
5.1.2 Modal Logic and Kripke Models	; 5.1.3
A Modal Translation Theorem	; 5.1.4 The
Implication Problem and Orthomodular Logic	
5.1.5 Orthomodular Foundations for Quantum Mechanics	

Sommario/riassunto

In this expanded edition of *Quanta, Logic and Spacetime*, the logical base is greatly broadened and quantum-computational aspects of the approach are brought to the fore. The first two parts of this edition may indeed be regarded as providing a self-contained and logic-based foundation for - and an introduction to - the enterprise known as quantum computing. The rest of the work takes on the task (as in the first edition) of computing from first principles certain dynamical expressions which turn out to compare favorably with the Lagrangian densities of the (massless) Standard Model, i
