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Nota di contenuto	Contents -- Preface -- List of participants -- One-particle irreducibility with initial correlations -- Multiple zeta values and periods: From moduli spaces to Feynman integrals -- From quantum electrodynamics to posets of planar binary trees -- Sweedler's duals and Schutzenberger's calculus -- Primitive elements of the Hopf algebra of free quasi-symmetric functions -- A Renormalisation Group approach to Stochastic Loewner Evolutions -- On the causal gauge principle -- 1. Introduction -- 2. Overview of the CGI method -- 3. The abelian model -- 4. Three MVBs -- 5. The Weinberg's alam model within CGI -- 6. Discussion -- References -- Abstract integration, combinatorics of trees and differential equations -- Rooted trees appearing in products and co-products -- Magnus expansions and beyond -- Wilsonian renormalization, differential equations and Hopf algebras -- 1. Introduction -- 2. Basics of wilsonian renormalization -- 3. Rooted trees and power series of non linear operators -- 4. Renormalization, effective actions and Feynman diagrams -- 5. Conclusion and outlook -- Acknowledgements -- References -- Algebraic analysis of non-renormalization theorems in supersymmetric

field theories -- Not so non-renormalizable gravity -- Renormalised multiple zeta values which respect quasi-shuffle relations -- Formulas for the Connes-Moscovici Hopf algebra -- Hopf algebras and the combinatorics of connected graphs in quantum field theory -- Hopf Algebras of Formal Diffeomorphisms and Numerical Integration on Manifolds -- A combinatorial and field theoretic path to quantum gravity: The new challenges of group field theory -- Noncommutative formal Taylor expansions and second quantised regularised traces -- Motives: An introductory survey for physicists -- 1. Introduction -- 2. The Grothendieck ring -- 3. The Tannakian formalism -- 4. Weil cohomology -- 5. Classical motives -- 6. Mixed motives -- 7. Motivic measures and zeta functions -- Appendix A. Motivic ideas in physics (by M.Marcolli) -- References -- Combinatorics and Feynman graphs for gauge theories -- Multi-scale Analysis and Non-commutative Field Theory.