Contents

Preface v

Manifestly Gauge Invariant Exact Renormalization Groups 1
STEFANO ARNONE, TIM R. MORRIS and OLIVER J. ROSTEN

SLE(8/3) and Brownian Excursions in Annuli 27
ROBERT O. BAUER

Cardy's Formula on the Triangular Lattice, the Easy Way 39
VINCENT BEFFARA

Rota–Baxter Algebras in Renormalization of Perturbative Quantum Field Theory 47
KURUSCH EBRAHIMI-FARD and LI GUO

Practicalities of Renormalizing Quantum Field Theories 107
J. A. GRACEY

Quantum Field Theory in Curved Spacetime 131
STEFAN HOLLANDS

Entropy of XY Spin Chain and Block Toeplitz Determinants 151
A. R. ITS, B.-Q. JIN and V. E. KOREPIN

On the Quantitative Boundary Behavior of SLE 185
NAM-GYU KANG

The Configurational Measure on Mutually Avoiding SLE Paths 199
MICHAEL J. KOZDRON and GREGORY F. LAWLER

Dyson–Schwinger Equations: From Hopf Algebras to Number Theory 225
DIRK KREIMER

Two-sided $SLE_{8/3}$ and the Infinite Self-Avoiding Polygon 249
GREGORY F. LAWLER and JOAN R. LIND

Using the Renormalization Group 281
D. G. C. MCKEON

Short Distance Behavior of Scaling Functions for the Planar Ising Model 307
JOHN PALMER

Constructing Conformal Field Theory Models 317
IVAN TODOROV

The Art of Computing Loop Integrals 345
STEFAN WEINZIERL

The Transition Temperature of the Weakly Interacting Bose Gas 397
J. ZINN-JUSTIN