

CONTENTS

Preface	vii
Introduction	ix
Part I Anomalies	
Non-triviality of gauge anomalies	3
<i>Juan Mañes & Bruno Zumino</i>	
Global anomalies	21
<i>E. Witten</i>	
On characteristic classes and continuous cohomology	29
<i>Raoul Bott</i>	
Can theories with anomalies be quantized?	41
<i>L. Faddeev</i>	
Superconformal anomalies and the Adler-Bardeen theorem	55
<i>M. T. Grisaru, B. Milewski & D. Zanon</i>	
Relations between Chern-Simons terms, anomalies and conformal supergravity	63
<i>P. van Nieuwenhuizen</i>	
Part II Strings	
Mini-introduction to strings	91
<i>E. Witten</i>	
Topics in superstring theory	109
<i>John H. Schwarz</i>	
Infinity and anomaly cancellation in superstring theories	119
<i>Michael B. Green</i>	
Higher dimensions, supersymmetry, strings	139
<i>Peter G. O. Freund</i>	
Kaluza-Klein approach to the heterotic string	149
<i>M. J. Duff, B. E. W. Nilsson & C. N. Pope</i>	
Multi-loop string amplitudes and Riemann surfaces	163
<i>J. G. Taylor</i>	
Critical dimensions for strings in a curved background	185
<i>E. Bergshoeff, H. Sarmadi & E. Sezgin</i>	

Heterotic sigma models and non-linear strings <i>C. M. Hull</i>	205
Superspace σ -models and Green-Schwarz covariant superstring actions <i>L. Mezincescu</i>	225
Introduction to gauge covariant string field theory <i>P. West</i>	245
Strings and spacetime physics <i>Malcolm J. Perry</i>	269
Part III Supergravity and supersymmetry	
Harmonic superspace and its applications in extended supersymmetry <i>E. Sokatchev</i>	283
Renormalization of supersymmetric Yang-Mills theories <i>Peter Breitenlohner & Dieter Maison</i>	309
Effective Langrangian for supersymmetric QCD <i>A. A. Slavnov</i>	329
A fond farewell to anti de Sitter space <i>Daniel Z. Freedman</i>	341
Local SU(8) invariance in d=11 supergravity <i>B. de Wit & H. Nicolai</i>	357
The N=2 Maxwell-Einstein supergravity theories: their compact and non-compact gaugings and Jordan algebras <i>M. Günaydin, G. Sierra & P. K. Townsend</i>	367
A realistic four-dimensional field theory from the IIB superstring? <i>M. Günaydin, L. J. Romans & N. P. Warner</i>	397
Structure of Kahler manifolds in N=2 vector multiplet-supergravity couplings <i>E. Cremmer</i>	411
Surface counterterms in supergravity <i>P. D. D'Eath</i>	427
Energy in gravity theories with quadratic curvatures <i>S. Deser</i>	445
Euclidean superalgebras for $3 \leq D \leq 10$ <i>J. Lukierski</i>	463