

# CONTENTS

|   |     |
|---|-----|
| Foreword<br><i>A. M. Polyakov</i>   | v   |
| There Are Some Things That Never Die...<br><i>L. Brink</i>  | vii |
| Foreword<br><i>D. Friedan</i>   | ix  |
| Gauge Transformations and Diffeomorphisms<br><i>A. M. Polyakov</i>  | 1   |
| Topics in Conformal Field Theory<br><i>L. Alvarez-Gaumé, G. Sierra and C. Gomez</i>   | 16  |
| Representations of $U_q(\mathfrak{gl}(n, \mathbb{C}))$ at $q = 0$ and the<br>Robinson-Shensted Correspondence<br><i>E. Date, M. Jimbo and T. Miwa</i> | 185 |
| The Sewing Technique and Correlation Functions<br>on Arbitrary Riemann Surfaces<br><i>P. Di Vecchia</i>   | 212 |
| Supergrassmannians, Super $\tau$ -Functions and Strings<br><i>S. N. Dolgikh and A. S. Schwarz</i>   | 231 |
| Conformal Field Theory and Purely Elastic $S$ -Matrices<br><i>V. A. Fateev and A. B. Zamolodchikov</i>  | 245 |
| Representations of Affine Kac-Moody Algebras and Bosonization<br><i>B. L. Feigin and E. V. Frenkel</i>  | 271 |
| Two-Dimensional Conformal Transformations Represented<br>by Quantum Fields in Minkowski Space-Time<br><i>R. Jackiw</i>                                | 317 |
| Riemann Surfaces, Operator Fields, Strings.<br>Analogues of the Fourier-Laurent Bases<br><i>I. M. Krichever and S. P. Novikov</i>                     | 356 |
| Criticality, Catastrophes, and Compactifications<br><i>E. J. Martinec</i>   | 389 |

|   |            |
|---|------------|
| <b>On the Explicit Construction of the Superstring Loop Measure<br/>in the Super-Schottky-Reggeon Formalism</b> | <b>434</b> |
| <i>J. L. Petersen</i>   |            |
| <b>Supersymmetric *Super&amp;ring Compactification</b>  | <b>467</b> |
| <i>J. H. Schwarz</i>  |            |
| <b>Physics with a Fundamental Length</b>  | <b>509</b> |
| <i>G. Veneziano</i>   |            |
| <b>The Central Charge in Three Dimensions</b>   | <b>530</b> |
| <i>E. Witten</i>  |            |
| <b>Covariant Formulations of the Superparticle and the Super-string</b>   | <b>560</b> |
| <i>L. Brink</i>   |            |
| <b>The Space of Conformal Field Theories and The Space of<br/>Classical String Ground States</b>                | <b>577</b> |
| <i>D. Friedan</i>   |            |