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; References ; CHAIRMAN: C.P. KORTHALS ALTES
; Physics of QCD Instantons ; 1 Introduction
; 2 Instantons and chiral symmetries
3 What instantons can do: a brief summary
4 Two-point correlation functions: T decays
; 5 Three-point correlators: the pion form-factor
; 6 Instantons at large Nc ; 7 The RHIC puzzles
; 8 Quantum mechanics of the glue in vacuum and high energy collisions ; 9 Acknowledgments
CHAIRMAN: E. SHURYAK Confinement and Duality
; 1 Confinement: an overview ; 2 Confinement of Magnetic Flux ; 3 Duality Sources and Fluxes
; 4 Duality and Confinement ; References
; CHAIRMAN: M. STRASSLER
Probing Grand Unification Through Neutrino Oscillations Leptogenesis and Proton Decay

Sommario/riassunto

In August/September 2002, a group of 78 physicists from 50 laboratories in 17 countries met in Erice, Italy, to participate in the 40th Course of the International School of Subnuclear Physics. The purpose of the School was to focus attention on the theoretical and phenomenological developments in gauge theories, as well as in all the other sectors of subnuclear physics. Experimental highights from the most relevant sources of new data were presented and discussed, including the latest news on theoretical developments in quantizing the gravitational forces. This volume constitutes the procee