

Contents

Part I Neutrinos, Astroparticle Physics, Cosmology and Gravity	
<hr/>	
The Neutrino Mass Matrix – From A_4 to Z_3 <i>Ernest Ma</i>	3
Neutrinos – Inner Properties and Role as Astrophysical Messengers <i>Georg G. Raffelt</i>	15
Lepton Flavor Violation in the SUSY Seesaw Model: An Update <i>Frank Deppisch, Heinrich Päs, Andreas Redelbach, Reinhold Rückl</i>	27
Sterile Neutrino Dark Matter in the Galaxy <i>Neven Bilić, Gary B. Tupper, Raoul D. Viollier</i>	39
Supernovae and Dark Energy <i>Ariel Goobar</i>	47
Semiclassical Cosmology with Running Cosmological Constant <i>Joan Solà</i>	59
Limits on New Inverse-Power Law Forces <i>Dennis E. Krause, Ephraim Fischbach</i>	73
Quantum Gravity Phenomenology and Lorentz Violation <i>Ted Jacobson, Stefano Liberati, David Mattingly</i>	83
On the Quantum Width of a Black Hole Horizon <i>Donald Marolf</i>	99
The Internal Structure of Black Holes <i>Igor D. Novikov</i>	113
Microscopic Interpretation of Black Hole Entropy <i>Maro Cvitan, Silvio Pallua, Predrag Prester</i>	125

Dark Matter Experiments at Boulby Mine <i>Vitaly A. Kudryavtsev</i>	139
Ultra High Energy Cosmic Rays and the Pierre Auger Observatory <i>Danilo Zavrtanik, Darko Veberič; for the AUGER Collaboration</i>	145
Self-Accelerated Universe <i>Boris P. Kosyakov</i>	155
Charge and Isospin Fluctuations in High Energy pp-Collisions <i>Mladen Martinis, Vesna Mikuta-Martinis</i>	163
Superluminal Pions in the Linear Sigma Model <i>Hrvoje Nikolić</i>	169
<hr/>	
Part II Strings, Branes, Noncommutative Field Theories and Grand Unification	
<hr/>	
Comments on Noncommutative Field Theories <i>Luis Álvarez-Gaumé, Miguel A. Vázquez-Mozo</i>	175
Seiberg-Witten Maps and Anomalies in Noncommutative Yang-Mills Theories <i>Friedemann Brandt</i>	189
Renormalisation Group Approach to Noncommutative Quantum Field Theory <i>Harald Grosse, Raimar Wulkenhaar</i>	197
Noncommutative Gauge Theories via Seiberg-Witten Map <i>Branislav Jurčo</i>	209
The Noncommutative Standard Model and Forbidden Decays <i>Peter Schupp, Josip Trampetić</i>	219
The Dressed Sliver in VSFT <i>Loriano Bonora, Carlo Maccaferri, Predrag Prester</i>	233
M5-Branes and Matrix Theory <i>Martin Cederwall, Henric Larsson</i>	243
Brane Gravity <i>Merab Gogberashvili</i>	251
Stringy de Sitter Brane-Worlds <i>Tristan Hübsch</i>	261

Finite Unified Theories and the Higgs Mass Prediction <i>Abdelhak Djouadi, Sven Heinemeyer, Myriam Mondragón, George Zoupanos</i>	273
Non-Commutative GUTs, Standard Model and C, P, T Properties from Seiberg-Witten Map <i>Paolo Aschieri</i>	285
Noncommutative Gauge Theory on the q-Deformed Euclidean Plane <i>Frank Meyer, Harold Steinacker</i>	293
A Multispecies Calogero Model <i>Marijan Mileković, Stjepan Meljanac, Andjelo Samsarov</i>	299
Divergencies in Noncommutative $SU(2)$ Yang-Mills Theory <i>Voja Radovanović, Maja Burić</i>	303
Gauge Theory on the Fuzzy Sphere and Random Matrices <i>Harold Steinacker</i>	307
<hr/>	
Part III Standard Model – Theory and Experiment	
<hr/>	
Waiting for Clear Signals of New Physics in B and K Decays <i>Andrzej J. Buras</i>	315
Electron-Positron Linear Collider <i>Klaus Desch</i>	333
New Source of CP Violation in B Physics? <i>Nilendra G. Deshpande and Dilip Kumar Ghosh</i>	345
LHC Physics <i>Fabiola Gianotti</i>	359
Precision Calculations in the MSSM <i>Wolfgang Hollik</i>	373
Theoretical Aspects of Heavy Flavour Physics <i>Thomas Mannel</i>	387
Hard Exclusive Processes and Higher-Order QCD Corrections <i>Kornelija Passek-Kumerički</i>	399
Strings in the Yang-Mills Theory: How They Form, Live and Decay <i>Adi Armoni, Mikhail Shifman</i>	415

Constraining New Physics from the Muon Decay <i>Astrid Bauer</i>	431
Jets in Deep Inelastic Scattering and High Energy Photoproduction at HERA <i>Gerd W. Buschhorn</i>	435
CP Violation from Orbifold: From Examples to Unification Structures <i>Nicolas Cosme</i>	447
Doubly Projected Functions in Out of Equilibrium Thermal Field Theories <i>Ivan Dadić</i>	451
Nonfactorizable Contributions in $\overline{B^0} \rightarrow D_s^+ D_s^-$ and $\overline{B_s^0} \rightarrow D^+ D^-$ Decays <i>Jan O. Eeg, Sijetlana Fajfer, Aksel Hiorth</i>	457
On the Geometry of Gauge Field Theories <i>Helmuth Hüffel, Gerald Kelnhofer</i>	461
On the Singlet Penguin in $B \rightarrow K\eta'$ Decay <i>Jan Olav Eeg, Krešimir Kumerički, Ivica Picek</i>	465
Bjorken-Like Limit versus Fermi-Watson Approximation in High Energy Hadron Diffraction <i>Andrzej R. Malecki</i>	469
Some Aspects of Radiative Corrections and Non-Decoupling Effects of Heavy Higgs Bosons in Two Higgs Doublet Model <i>Michal Malinský</i>	473
Towards a NNLO Calculation in Hadronic Heavy Hadron Production <i>Jürgen G. Körner, Zakaria Merebashvili, Mikhail Rogal</i>	477
Jet Physics at CDF <i>Sally Seidel</i>	481
About the Meeting	487
List of Participants	489