

Contents

Preface	7
 Physics	
A. Khirnov and T. Ledvinka, Gauge Choice in Numerical Evolution of the Brill Data, f-1	9
I. Kolář and P. Krtouš, Test Electromagnetic Field Admitting Separability of Hamilton–Jacobi and Klein–Gordon Equations in Kerr–NUT–(A)dS Spacetimes, f-1	15
L. Ledvina and D. Heyrovský, Modeling Quasar Microlensing, f-1	21
M. Zajaček , A. Eckart, F. Peissker, G. D. Karssen, V. Karas, Infrared-excess Source DSO/G2 Near the Galactic Center: Theory vs. Observations, f-1	27
E. Varga and L. Skrbek, Simulating Quantum Turbulence in Non-uniform Coflow of He-II, f-3	36
D. Wagenknecht , I. Turek, and K. Carva, <i>Ab Initio</i> Calculations of Temperature Dependent Resistivity for Transition Metals, f-3	42
A. L. Kozub , J. Kolorenč, and A. B. Shick, Screening of Magnetic Moment at Co Impurity in Cu Host, f-3	48
P. Zháňal , P. Harcuba, M. Hájek, Microstructural Changes in β -Ti Alloy Investigated by Electrical Resistance, f-3	54
O. Molnářová , P. Málek, H. Becker, The Investigation of Al7075 and Al7075+1 wt. % Zr Alloys Prepared by Spark Plasma Sintering Technology, f-3	61
S. V. Kondratenko and A. O. Mykytiuk , Photogeneration and Recombination in Structures with Ge Nanoclusters Grown on Si(001), f-13	67
E. Alekseeva , J. Prokeš, P. Bober, J. Stejskal, The Influence of Compression Pressure on Transport Properties of Polypyrrole Nanotubes, f-4	72
M. Vaidulych , J. Hanus, Preparation of Porous Structures and Their Surface Modification, f-4	77
E. Barteneva , L. Vergun, Yu. Myagchenko, K. Teliman, Development of Methods for Water Activation and Study of Optical and Physical Properties of Solutions Based on It, f-4	84
V. Medvecká , A. Zahoranová, D. Kováčik, M. Černák, Plasma Assisted Preparation of Zirconia Submicron Fibers, f-5	88
I. Vasylchenko , R. Grill, and E. Belas, Oxidation-inhibited Electroless Preparation of (CdZn)Te–Au Contacts, f-6	94
T. Hural, M. Kyryliuk , M. Ovchar, V. Nastich, Research of Quasidynamic Characteristics of Ring Laser Mirror with Piezocorrector Using White Light Interferometer “Relief”, f-6	99
P. Čech , Z. Grolmusová, P. Veis, A. Šivo, P. Povinec, Comparison of $^{13}\text{C}/^{12}\text{C}$ Isotope Ratios from the Atmosphere Measured Using Two Different Analytical Techniques, f-7 ...	106
J. Skořepa , Predictability of the Atmosphere and Its Quantification, f-8	110

P. Hamal and T. Sýkora , Exclusive Pion Production Measured by ATLAS at $\sqrt{s} = 7$ TeV, f-9	117
M. Zamkovský on behalf of the NA62 experiment, Study of the Extremely Rare Decay $K^+ \rightarrow \pi^+ \nu \bar{\nu}$ with the NA62 Experiment at CERN, f-9	123
M. Pešek , Pion-induced Polarized Drell–Yan Process at COMPASS, f-9	128
R. Kříček , The Link of Education and Popularization of Astronomy with the Choice of a Future Focus of Study, f-12	132
M. Ryston , Theory of Relativity — How to Develop Its Understanding at a Secondary School Level, f-12	138
K. Havlíček , Experiments in Physics Education: What do Students Remember? f-12	144
K. Kolář , An Overview of Research Methods of Gain, f-12	149
A. Kovalenko , Š. Roučka, S. Rednyk, T. D. Tran, D. Mulin, R. Plašil, J. Glosík, Source of Atomic Hydrogen for Ion Trap Experiments: Review and Basic Properties, f-2 ..	155
S. Rednyk , D. Mulin, Š. Roučka, T. D. Tran, S. S. Kumar, R. Plašil, A. Kovalenko, J. Glosík, Study of the $NH^+ + H \rightarrow N^+ + H_2$ Reaction Rate Coefficient Using 22-Pole Ion Trap, f-2	162
A. Spesyvvi and P. Španěl , Flow Drift Tube Study of Gas Phase Formation of Hydrated Hydronium, f-2	168
N. P. Chirskaya , L. S. Novikov, E. N. Voronina, Computer Modelling of Ionized Radiation Impact on Micro-structured Materials, f-2	173
L. Moravský , M. Klas, Š. Matejčík, I. Jōgi, OES Study of Glow Region of Argon APPJ at Various Gas Flow Rates, f-2	179
Z. Lichvanova , M. Sabo, S. Matejčík, Interactions of Multiple Reactant Ions with TNT and RDX Studied by Corona Discharge Ion Mobility-mass Spectrometry, f-2 ...	184
Z. Tučeková , K. Kučerová, A. Zahoranová, and M. Černák, Parameters of Plasma Generated by Diffuse Coplanar Surface Barrier Discharge Used for Inactivation of <i>Escherichia Coli</i> , f-2	187
K. Kučerová , K. Hensel, Biological and Chemical Effect of DC Transient Spark Discharge on <i>Escherichia Coli</i> , f-2	192
A. Pitňa , J. Šafránková, Z. Němeček, Evolution of Turbulence Through Terrestrial Bow Shock and its Changes in the Foreshock, f-2	199
A. Tomori , Numerical Plasma Dispersion Relation Solver, f-2	206
P. Shustov , A. Artemyev, and E. Yushkov, Non-adiabatic Scattering of Relativistic Electrons in the Inner Magnetosphere, f-2	212
J. Fišer and J. Chum , HF Doppler Observations of Ionospheric Disturbances over Taiwan, f-2	217
M. Vyšinka , J. Vaverka, J. Pavlů, Z. Němeček, J. Šafránková, and J. Lavková, On-surface Dust Grain Sputtering: Experiment and Model, f-2	222
M. J. Morávek , A. Kaňka, J. Čáp, V. Hrachová, Atomic Oxygen Concentration Observation by Optical Emission Spectrometry in O_2 and O_2-N_2 DC Glow Discharge, f-2	227
M. Laca , M. J. Morávek, L. Schmiedt, V. Hrachová, A. Kaňka, Fluid Model of the Positive Column in DC Discharge, f-2	233

S. Micienka, P. Pira, T. Burian, M. Jerab, and J. Wild, Bismuth Glow Discharge, f-2 ...	241
P. Ondáč, A. Mašláni, and M. Hrabovský, Investigation of Anode Attachment Area in Water/Argon Stabilized Plasma Arc, f-2	245
T. Markovič, J. Havlíček, M. Imříšek, P. Cahyna, R. Pánek, P. Bohm, M. Komm, J. Urban, A. Havránek, Y.Q. Liu, Response of the COMPASS Plasma to Magnetic Perturbation Experiments, f-2	252
K. Kovařík, I. Ďuran, J. Stöckel, J. Seidl, J. Havlíček, P. Háček, M. Spolaore, N. Vianello, Radial Propagation Filaments in SOL of the COMPASS Tokamak, f-2	258
P. Hacek, M. Berta, J. Krbec, J. Stöckel, V. Weinzettl, A. Bencze, S. Zoletnik, G. Anda, Measurements with Atomic Beam Probe Diagnostic on the COMPASS Tokamak, f-2	264
A. Podolník, M. Komm, R. Dejarnac, R. Pánek, J. P. Gunn, Simulations of Space Charge Effect on Ion Sensitive Probes, f-2	269
M. Tomes and V. Weinzettl, Calibration of High-resolution Spectrometer for C III Triplet Measurements, f-2	274

[Faint, illegible text, likely bleed-through from the reverse side of the page]

[Faint, illegible text, likely bleed-through from the reverse side of the page]

[Faint, illegible text, likely bleed-through from the reverse side of the page]