

CONTENTS

<i>M. Abramowicz</i> Zdeněk Stuchlík in the pursuit of beauty	i
<i>M. Boboqambarova, B. Turimov, B. Ahmedov</i> Charged particle motion around Reissner-Nordström black hole	1
<i>M. Čemeljić, F. Yuan, H. Yan</i> Flux ropes in SANE disks	11
<i>A. Demyanova, N. Kurbonov, O. Rakhimov, Y. Turaev, J. Rayimbaev</i> Characteristic orbits of charged particles around charged black holes	19
<i>S. Hensh, A. Tursunov, M. Urbanec, Z. Stuchlík</i> Electrostatic effects on the hydrostatic equilibrium of compact stars	29
<i>I. Hubač, F. Blaschke, O. N. Karpíšek, M. Švec, S. Wilson</i> Quantum information in biomolecules: transcription and replication of DNA using a soliton model	55
<i>Y. Istomin, A. Gunya</i> Proton acceleration in the active galactic nuclei	73
<i>A. Janiuk, D. Król</i> Accretion induced black hole spin up in magnetized collapsars	83
<i>B. Juraev, A. Tursunov</i> Particle ionization near a weakly charged black hole	97
<i>V. Karas, K. Sapountzis, A. Janiuk</i> Magnetically ejected disks: Equatorial outflows near vertically magnetized black hole	107
<i>F. Kayanikhoo, C. Providência</i> The effect of magnetic field on the structure of strange quark star	121
<i>M. Kerachian, G. Acquaviva, G. Lukes-Gerakopoulos</i> Dynamical analysis approaches in spatially curved FRW spacetimes	133
<i>M. Kološ, D. Bardiev, B. Juraev</i> Charged particle motion around Schwarzschild black hole with split monopole magnetosphere	145
<i>M. Kološ, A. Janiuk</i> Simulations of black hole accretion torus in various magnetic field configurations	153
<i>O. Kopáček, T. Tahamtan, V. Karas</i> Emergence of magnetic null points in electro-vacuum magnetosphere of compact objects: The case of a plunging neutron star	165

<i>G. Lukes-Gerakopoulos, G. Acquaviva, C. Markakis</i> Probing dark energy through perfect fluid thermodynamics	175
<i>M. Matuszková, K. Klimovičová, G. Urbancová, D. Lančová, E. Šrámková, G. Török</i> Oscillations of non-slender tori in the Hartle-Thorne geometry	185
<i>R. Mishra, M. Čemeljić, Włodek Kluźniak</i> Backflow in simulated MHD accretion disks	203
<i>B. Narzilloev, J. Rayimbaev</i> Can conformal gravity mimic the rotation of Kerr black hol in terms of particle dynamics?	209
<i>R. Pánis, M. Kološ, Z. Stuchlík</i> Detection of chaotic behavior in time series	221
<i>D. Pugliese, H. Quevedo</i> On the metric bundles of axially symmetric spacetimes	233
<i>D. Pugliese, Z. Stuchlík</i> Effects of polytropic equations of state and toroidal magnetic fields on the accreting tori sequences in ringed accretion disks	245
<i>Y. Pulnova, A. T. Araudo</i> On maximum energy cutoff in the hotspot of radiogalaxies 3C 105 and 3C 445	257
<i>J. Rayimbaev, N. Juraeva</i> Dynamics of magnetized particles around Reissner-Nordström black holes	263
<i>S. Shaymatov, B. Ahmedov, A. Bokhari, Y. Vybyli</i> Exact solutions of Einstein field equations	277
<i>M. Štolc, M. Zajaček, V. Karas</i> From gappy to ringed: signatures of an accretion disk radial structure in profiles of the reflection line	287
<i>P. Suková, M. Zajaček, V. Witzany, V. Karas</i> Perturbing the accretion flow onto a supermassive black hole by a passing star	299
<i>T. Tahamtan</i> Einstein–scalar field–square root nonlinear electrodynamics solution	317
<i>B. Toshmatov, S. Tojiev, J. Xomidjonov</i> Construction of Taub-NUT black hole solutions in general relativity coupled to nonlinear electrodynamics	327
<i>B. Turimov, B. Toshmatov, Z. Stuchlik</i> On magnetized orbits around Schwarzschild black hole	337
<i>M. Urbanec, M. Fuzik</i> Neutron stars with quark cores	343
<i>R. S. S. Vieira, W. Kluźniak</i> Levitating atmospheres around naked singularities	351

<i>M. Zajaček, A. Araudo, V. Karas, B. Czerny, A. Eckart, P. Suková, M. Štolc</i>	
Missing bright red giants in the Galactic center:	
A fingerprint of its once active state?	357
<i>O. Zelenka, G. Lukes-Gerakopoulos, V. Witzany</i>	
Recurrence analysis of spinning particles in the Schwarzschild background	375
<i>W. Zhang, M. Dovčiak, M. Bursa, J. Svoboda, V. Karas</i>	
Understanding the iron $K\alpha$ line emissivity profile	
with GR radiative transfer code	383