

LIST OF PUBLISHED PAPERS - 2017
Institute for Nuclear Research and Nuclear Energy, Bulgarian Academy of Sciences

Laboratory “Theory of Elementary Particles”

1. **A. Kyuldjiev**. PISA 2012 evaluation of the problem-solving skills of the Bulgarian pupils and the role of inquiry problems. Engaging pedagogy for science education, 2017
2. **Anguelova, L.** On Slow-roll Glueball Inflation from Holography. *Bulg. J. Phys.*, 44, arXiv:1611.00295 [hep-th], 2017, 48
3. **Bozhilov, P.** String solutions in $AdS_3 \times S^3 \times S^3 \times S^1$ with B-field. *International Journal of Modern Physics A*, World Scientific, 2017, ISI IF:1.597
4. **Dobrev, V.K.**, Salom, I. Positive Energy Unitary Irreducible Representations of the Superalgebras $osp(1|2n, R)$ and Character Formulae for $n=3$. *J. Phys.: Conf. Ser.*, 804, IOP Publishing, 2017, DOI:10.1088/1742-6596/804/1/012015, 012015. SJR:0.161
5. **Dobrev, V.K.**, Salom, I. Positive Energy Unitary Irreducible Representations of the Superalgebra $osp(1|8, R)$. *Publ. Inst. Math. Belgrade*, 102, Mathematical Institute of the Serbian Academy of Sciences and Arts, 2017, ISSN:0350-1302, ISI IF:0.195
6. **Dobrev, V.K.** Classification of Conformal Representations Induced from the Maximal Cuspidal Parabolic. *Physics of Atomic Nuclei*, 80, 2, Springer, 2017, ISSN:1063-7788, 347-352. ISI IF:0.457
7. **Dobrev, V.K.** Invariant Differential Operators for Non-Compact Lie Groups: Summary of $SU(4,4)$ Multiplets. *Physics of Particles and Nuclei, Letters*, 14, 2, Springer, 2017, ISSN:1547-4771, DOI:10.1134/S154747711702008X, 277-285. SJR:0.3
8. **Dobrev, V.K.** Multiparameter quantum Minkowski space-time and quantum Maxwell equations hierarchy. *Bulg. J. Phys.*, 44, 1, Heron Press, 2017, ISSN:1310-0157, 31-38
9. **Dobrev, Vladimir K.** Invariant Differential Operators, Volume 2: Quantum Groups. *De Gruyter Studies in Mathematical Physics*, 39, De Gruyter, Berlin, 2017, ISBN:978-3-11-043543-6, DOI:10.1515/9783110427707, 395
10. **Georgiev, L.S.** Topological Quantum Computation with Non-Abelian Anyons in Fractional Quantum Hall States. *Quantum Systems in Physics, Chemistry, and Biology*, 30, Springer, 2017, ISBN:978-3-319-50254-0, 75-94
11. **Gerdjikov, V.**, Todorov, M, **Kyuldjiev, A.** Adiabatic interactions of Manakov solitons—Effects of cross-modulation. *Wave Motion*, Vol. 71, Elsevier, 2017, ISSN:0165-2125, DOI:dx.doi.org/10.1016/j.wavemoti.2016.08.004, 71-81. SJR:0.789, ISI IF:1.575
12. **Hadjiivanov, L.**, Furlan, P.. Quantum groups as generalized gauge symmetries in WZNW models. Part I. The classical model. *Physics of Particles and Nuclei (PEPAN; Физика элементарных частиц и атомного ядра)*, 48, 4, ОИЯИ Дубна, Русия; Pleiades Publishing, distributed by Springer, 2017, ISSN:Print: 1063-7796, Online: 1531-8559, DOI:10.1134/S1063779617040049, 509-563. ISI IF:0.519

13. **Hadjiivanov, L.**, Furlan, P.. Quantum groups as generalized gauge symmetries in WZNW models. Part II. The quantized model. Physics of Particles and Nuclei (PEPAN; Физика элементарных частиц и атомного ядра), 48, 4, ОИЯИ Дубна, Русия; Pleiades Publishing, distributed by Springer, 2017, ISSN:Print: 1063-7796, Online: 1531-8559, DOI:10.1134/S1063779617040050, 564-621. ISI IF:0.519
14. **Hristov, Kiril**, Benini, Francesco, Zaffaroni, Alberto. Exact microstate counting for dyonic black holes in AdS4. Physics Letters B, 771, 2017, DOI:10.1016/j.physletb.2017.05.076, 462-466. ISI IF:4.807
15. **Hristov, Kiril**, Hosseini, Seyed Morteza, Passias, Achilleas. Holographic microstate counting for AdS4 black holes in massive IIA supergravity. Journal of High Energy Physics, 1710, 190, Springer, 2017, ISSN:1029-8479, DOI:10.1007/JHEP10(2017)190, ISI IF:6.063
16. **Hristov, Kiril**, Hosseini, Seyed Morteza, Zaffaroni, Alberto. An extremization principle for the entropy of rotating BPS black holes in AdS5. Journal of High Energy Physics, 1707, 106, Springer, 2017, ISSN:1029-8479, DOI:10.1007/JHEP07(2017)106, ISI IF:6.063
17. **Ivanov, B. V.** Analytical study of anisotropic compact star models. Eur. Phys. J. C, 77, 11, Springer, 2017, ISSN:1434-6044, DOI:10.1140/epjc/s10052-017-5322-7, 738. ISI IF:5.331
18. **Kyuldjiev, A.** PISA 2015 Assessment, IYPT and Education. IYPT Magazine, 5, National Taiwan Normal University, 2017, 4-10
19. **Nedanovski Dimitar, Nikolov Nikolay.** Analytic renormalization and residues of Feynman diagrams. Comptes rendus de l'Académie bulgare des Sciences, 70, Issue 9, 2017, ISSN:1310-1331, SJR:0.251, ISI IF:0.251
20. **Nissimov, E., Pacheva, S., Stoilov, M.,** Guendelman, E. Einstein-Rosen 'Bridge' Revisited and Lightlike Thin-Shell Wormholes. Bulgarian Journal of Physics, 44, 1, Heron Press Ltd., Sofia, 2017, ISSN:1310-0157, 85-98
21. **Nissimov, E., Pacheva, S.,** Guendelman, E. Cosmology via Metric-Independent Volume-Form Dynamics. Proceedings 2nd Karl Schwarzschild Meeting on Gravitational Physics (KMS 2015), Springer, 2017, ISSN:0930-8989
22. **Nissimov, E., Pacheva, S.,** Guendelman, E. Quintessential Inflation, Unified Dark Energy and Dark Matter, and Higgs Mechanism. Bulgarian Journal of Physics, 44, 1, Heron Press Ltd., Sofia, 2017, ISSN:1310-0157, 15-30
23. **Stoilova, N.I.,** Thierry-Mieg, J., Van der Jeugt, J.. Extension of the $osp(m|n) \sim so(m-n)$ correspondence to the infinite-dimensional chiral spinors and self dual tensors. J. Phys. A, 50, 15, 2017, 155201. ISI IF:1.857
24. **Stoilova, N.I.,** Van der Jeugt, J.. Lie Superalgebraic Approach to Quantum Statistics. $osp(3|2)$ Wigner Quantum Oscillator. Bulg.J.Phys., 2017
25. **Stoilova, N.I.,** Van der Jeugt, J.. The $Z_2 \times Z_2$ -graded Lie superalgebra $pso(2m+1|2n)$ and new parastatistics representations. arXiv:1711.02136, 2017

26. **Stoimenov, S.** Boundedness of two-point correlators covariant under the meta-conformal algebra. Bulgarian Journal of Physics, 44, 1, Heron Press Ltd Sofia, 2017
27. **Tonev, D, Goutev, N, Georgiev, L.S., Nikolov, A.** Radioisotopes Production Laboratory at the Institute for Nuclear Research and Nuclear Energy. Progress in Theoretical Chemistry and Physics, 30, Springer Interational Publishing, 2017, ISSN:1567-7354, DOI:10.1007/978-3-319-50255-7, xxxi-xxxix
28. **Кюлджиев, А.** Имат ли място изследователските задачи във висшето образование. Експериментът -- основа на образованието по физика, Херон Прес, 2017, ISBN:978-954-580-367-3, 99-102
29. **Кюлджиев, А.** Предизвикателствата пред нашето образование, изследванията на PISA и изследователските задачи. Експериментът -- основа на образованието по физика, Херон Прес, 2017, ISBN:978-954-580-367-3, 175-178
30. **Кюлджиев, А.** Прекрачила ли е нашата образователна система в XXI век?. Наука, XXVII, 5, Съюз на учените в България, 2017, ISSN:0861 3362, 47-50
31. **Fiziev, P., Marinov, K.** Modeling of non-rotating neutron stars in minimal dilatonic gravity. Astrophysics and space science, 362, 8, Springer, 2017, ISSN:1572-946X, DOI:10.1007/s10509-016-2991-x, ISI IF:1.678
32. **Furlan, P., Petkova, V.B.** W4 Toda example as hidden Liouville CFT. Phys. of Part. and Nucl. Lett., 14, 2, 2017, ISSN:1547-4771, DOI:https://doi.org/10.1134/S1547477117020108, 286-290. ISI IF:0.42
33. **Pnigouras, P., Kokkotas, K., Doneva, D.** Saturation of the f-mode instability in neutron stars. The Fourteenth Marcel Grossmann Meeting, On Recent Developments in Theoretical and Experimental General Relativity, Astrophysics, and Relativistic Field Theories, 2017, 4131
34. **Staykov, K., Doneva, D., Yazadjiev, S.** Neutron and strange stars in RR-squared gravity. The Fourteenth Marcel Grossmann Meeting, On Recent Developments in Theoretical and Experimental General Relativity, Astrophysics, and Relativistic Field Theories, 2017, 1557
35. **Van der Jeugt, J., Stoilova, N.I.** The "odd" Gelfand-Zetlin basis for representations of general linear Lie superalgebras. in: Physical and Mathematical Aspects of Symmetries, Proceedings of the 31st International Colloquium in Group Theoretical Methods in Physics Editors: Duarte, s., Gazeau, J.-P., Faci, S., Micklitz, T., Scherer, R., Toppan, F. (Eds.), Springer International Publishing Copyright Holder, 2017, ISBN:978-3-319-69163-3, DOI:10.1007/978-3-319-69164-0
36. **Yazadjiev, S., Doneva, D., Kokkotas, K.** Oscillation modes of rapidly rotating neutron stars in scalar-tensor theories of gravity. 96, Phys. Rev. D, 2017, 064002. ISI IF:4.557

LIST OF SUBMITTED PAPERS – 2017, to appear
Institute for Nuclear Research and Nuclear Energy, Bulgarian Academy of Sciences

Laboratory “Theory of Elementary Particles”

1. **Anguelova, L**, Suranyi, P, Wijewardhana, L.C.R.. Systematics of Constant Roll Inflation. arXiv:1710.06989 [hep-th], submitted for publication: 2017
2. **Bozhilov, P.** Giant magnon-like solution in $Sch_5 \times S^5$. submitted for publication: 2017
3. **Bozhilov, P.** Some semiclassical structure constants for $AdS_4 \times CP^3$. submitted for publication: 2017
4. **Christova, E.**, Leader, E., **Stoilov, M.** Consistency tests for the extraction of the Boer-Mulders and Sivers functions. ArXiv 1705.10613, submitted for publication: 2017
5. **Christova, E.**, Leader, E., **Stoilov, M.** Tests for the extraction of the Boer-Mulders functions. arXiv:1710.05657, Journal of Physics: Conference Series, 938, conference 1, submitted for publication: 2017
6. **Doneva, D.**, Pappas, G.. Universal Relations and Alternative Gravity Theories. Invited chapter of the book "Physics and Astrophysics of Neutron Stars", NewCompStar COST Action 1304, submitted for publication: 2017
7. **Nissimov, E.**, **Pacheva, S.**, Guendelman, E.. Quintessence in Multi-Measure Generalized Gravity Stabilized by Gauss-Bonnet/Inflaton Coupling. Bulgarian Journal of Physics, 45, 1, Heron Press Ltd., Sofia, submitted for publication: 2017, ISSN:1310-0157
8. **Nissimov, E.**, **Pacheva, S.**, Guendelman, E.. Wheeler-DeWitt Quantization of Gravity Models of Unified Dark Energy and Dark Matter. Springer Series in Mathematics and Statistics, Springer, submitted for publication: 2017, ISSN:2194-1009, SJR:0.161
9. **Stoimenov, S.** Meta-conformal algebra in d spatial dimensions. arXiv preprint arXiv: 1711.05062, submitted for publication: 2017
10. **Todor Popov.** Pre-Plactic Algebra and Snakes. submitted for publication: 2017
11. Boradjiev, I., **Christova, E.**, Eberl, H.. Dispersion theoretic calculation of the $H \rightarrow Z + \gamma$ amplitude. arXiv:1711.07298, submitted for publication: 2017