

## LIST OF JOINT PUBLICATIONS

Projects within the framework of the Agreement between  
Bulgarian Academy of Sciences (Sofia, Bulgaria) and  
Ben-Gurion University of the Negev (Beer-Sheva, Israel)

Participants: Prof. Emil Nissimov and Prof. Svetlana Pacheva (INRNE-BAS)  
Prof. Eduardo Guendelman, Prof. Alexander Kaganovich, Dr. Mahary Visahoun  
(Dept. Physics, BGU)

1. *Volume-Preserving Diffeomorphisms Versus Local Gauge Symmetry*. *Phys. Lett.* **360B** (1995) 57 (*hep-th/9505128*).  
By E.I. Guendelman, E. Nissimov and S. Pacheva (Ben-Gurion Univ., Beer-Sheva), 1995.
2. *Composite Vector and Tensor Gauge Fields, and Volume-Preserving Diffeomorphisms*. in “*Spring Physics Fete 99*”, ed. B Horowitz, Ben-Gurion Univ. Press (1999) (*hep-th/9903245*).  
By E.I. Guendelman (Ben-Gurion Univ., Beer-Sheva), E. Nissimov, S. Pacheva (Ben-Gurion Univ., Beer-Sheva; Inst. Nucl. Res., Sofia) 1999.
3. *String and Brane Models with Spontaneously or Dynamically Induced Tension*. *Phys. Rev.* **D66** (2002) 046003 (*hep-th/0203024*).  
By E.I. Guendelman and A. Kaganovich (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2002.
4. *String and Brane Tensions as Dynamical Degrees of Freedom*, in “*First Workshop on Gravity, Astrophysics and Strings*”, p.136, P. Fiziev *et.al.* eds., Sofia Univ. Press, 2003 (*hep-th/0210062*).  
By E.I. Guendelman and A. Kaganovich (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2002.
5. *Strings, p-Branes and Dp-Branes With Dynamical Tension*, in the proc. of “*Second Internat. School on Modern Math. Physics*”, p.271, Kopaonik (Serbia and Montenegro), B. Dragovic and B. Sazdovic (eds.), Belgrade Inst. Phys. Press, 2003 (*hep-th/0304269*).  
By E.I. Guendelman and A. Kaganovich (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2003.
6. *Impact of Dynamical Tensions in Modified String and Brane Theories*, in “*Lie Theory and Its Applications in Physics V*”, pp.241-252, V. Dobrev, H. Doebner *et.al.* eds., World Scientific, 2004 [ISBN 981-238-936-9] (*hep-th/0401083*).  
By E.I. Guendelman and A. Kaganovich (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2004.
7. *Weyl-Invariant Light-Like Branes and Black Hole Physics*, talk at the Annual Workshop of European RTN “EUCLID”, Sozopol (Bulgaria, 2004), *hep-th/0409078*.  
By E.I. Guendelman and A. Kaganovich (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2004.
8. *Novel Aspects in p-Brane Theories: Weyl-Invariant Light-Like Branes*, in “*Second Workshop on Gravity, Astrophysics and Strings*”, Kiten, Bulgaria, pp.170-182, P. Fiziev *et.al.* eds., Sofia Univ. Press, 2005) (*hep-th/0409208*).  
By E.I. Guendelman and A. Kaganovich (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2004.

9. *New Physics From A Dynamical Volume Element*, in “What Comes Beyond the Standard Models”, Bled Workshops in Physics Vol.5, pp.40-49, N. Borstnik, H.B. Nielsen *et.al.* eds., Ljubljana Univ. Press (2004) ([hep-th/0411122](#)).

By E.I. Guendelman and A. Kaganovich (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2004.

10. *Weyl-Conformally Invariant p-Brane Theories*, in “Third Internat. School on Modern Math. Physics”, Zlatibor (Serbia and Montenegro), pp.349-366, B. Dragovic, Z. Rakic and B. Sazdovic (eds.), Belgrade Inst. Phys. Press, 2005 [YU ISBN 86-82441-17-9] [hep-th/0501220](#) .

By E.I. Guendelman and A. Kaganovich (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2005.

11. *Weyl-Conformally Invariant Light-Like p-Brane Theories: New Aspects in Black Hole Physics and Kaluza-Klein Dynamics*, *Phys. Rev. D* **72** (2005) 086011 ([hep-th/0507193](#)).

By E.I. Guendelman and A. Kaganovich (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2005.

12. *Self-Consistent Solutions for Bulk Gravity-Matter Systems Coupled to Lightlike Branes*, talks at *IV Summer School in Modern Mathematical Physics*, Belgrade (Sept. 2006), and 2nd Workshop of European RTN “*Constituents, Fundamental Forces and Symmetries of the Universe*”, Naples (Oct. 2006), [hep-th/0611022](#).

By E.I. Guendelman and A. Kaganovich (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2006.

13. *Weyl-Invariant Lightlike Branes and Soldering of Black Hole Space-Times*. *Fortschritte der Physik* **55** (2007) 579-584 ([hep-th/0612091](#))

By E.I. Guendelman and A. Kaganovich (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2006.

14. *Generalized Gauge Field Approach To Lightlike Branes*. in “*Fourth Summer School in Modern Mathematical Physics*”, pp.215-228, B. Dragovic and B. Sazdovic (eds.), Belgrade Inst. Phys. Press, 2007 ([hep-th/0703114](#)).

By E.I. Guendelman and A. Kaganovich (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2007.

15. *Lightlike Braneworlds*. in “*Lie Theory and Its Applications in Physics VII*”, pp.79-88, V. Dobrev and H. Doebner eds., Heron Press (2008) [ISBN 1310-0157] ([arxiv:0711.1841](#)[hep-th]).

By E.I. Guendelman and A. Kaganovich (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2007.

16. “*Mass Inflation*” *With Lightlike Branes*. *Centr. Europ. Journ. Phys.* **7** (2009) 668-676 ([arxiv:0711.2877](#)[hep-th]).

By E.I. Guendelman and A. Kaganovich (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2007.

17. *Lightlike p-Branes: Mass “Inflation” and Lightlike Braneworlds*. [arxiv:0810.5008](#)[hep-th], in “*Fifth Mathematical Physics Meeting*”, pp.171-183, B. Dragovic and Z. Rakic (eds.), Belgrade Inst. Phys. Press, 2009.

By E.I. Guendelman and A. Kaganovich (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2008.

18. *Variable-Tension Lightlike Brane as a Gravitational Source of Traversable Misner-Wheeler-Type Wormholes.* *Phys. Lett.* **B673** (2009) 288-292 (arxiv:0811.2882[hep-th]).  
By E.I. Guendelman and A. Kaganovich (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2008.
19. *Lightlike Branes as Natural Candidates for Wormhole Throats.* *Forsch. Phys.* **57** (2009) 566-572 (arxiv:0901.4443[hep-th]).  
By E.I. Guendelman and A. Kaganovich (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2009.
20. *Spherically Symmetric and Rotating Wormholes Produced by Lightlike Branes.* *Int.J. Mod. Phys. A* **25** (2010) 1405-1428 (arxiv:0904.0401[hep-th]).  
By E.I. Guendelman and A. Kaganovich (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2009.
21. *Einstein-Rosen “Bridge” Needs Lightlike Brane Source.* *Phys. Lett.* **B681** (2009) 457-462 (arxiv:0904.3198[hep-th]).  
By E.I. Guendelman and A. Kaganovich (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2009.
22. *Non-Singular Black Holes from Gravity-Matter-Brane Lagrangians.* *Int.J. Mod. Phys. A* **25** (2010) 1571-1596 (arxiv:0908.4195[hep-th]).  
By E.I. Guendelman and A. Kaganovich (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2009.
23. *Asymmetric Wormholes via Electrically Charged Lightlike Branes.* “Lie Theory and Its Applications in Physics VIII”, pp.60-75, V. Dobrev ed., AIP Conference Proceedings vol.**1243**, Melville, New York (2010) (arxiv:0911.0940[hep-th]).  
By E.I. Guendelman and A. Kaganovich (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2009.
24. *Space-Time Compactification Induced By Lightlike Branes.* *Invertis Journal of Science and Technology*, **3** (2010) 91-100 (arxiv:0912.3712[hep-th]).  
By E.I. Guendelman and A. Kaganovich (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2009.
25. *Space-Time Compactification/Decompactification Transitions Via Lightlike Branes.* *Gen. Rel. Grav.* **43** (2011) 1487-1513 (arxiv:1007.4893[hep-th]).  
By E.I. Guendelman and A. Kaganovich (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2010.
26. *Space-Time Compactification, Non-Singular Black Holes, Wormholes and Braneworlds via Lightlike Branes.* in “Sixth Mathematical Physics Meeting”, B. Dragovic and Z. Rakic (eds.), Belgrade Inst. Phys. Press, 2011 [ISBN 978-86-82441-30-4] (arxiv:1011.6241[hep-th]).  
By E.I. Guendelman and A. Kaganovich (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2010.
27. *Asymptotically de Sitter and anti-de Sitter Black Holes with Confining Electric Potential.* *Phys. Lett.* **B704** (2011) 230-233, erratum *Phys. Lett.* **B705** (2011) 545 (arxiv:1108.0160[hep-th]).

By E.I. Guendelman and A. Kaganovich (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2011.

28. *Hiding Charge in a Wormhole. The Open Nuclear and Particle Physics Journal* **4** (2011) 27-34 (arxiv:1108.3735[hep-th]).

By E.I. Guendelman and A. Kaganovich (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2011.

29. *Hiding and Confining Charges via “Tube-like” Wormholes. Int.J. Mod. Phys. A* **26** (2011) 5211-5239 (arxiv:1109.0453[hep-th]).

By E.I. Guendelman and A. Kaganovich (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2011.

30. *Lightlike Braneworlds in Anti-de Sitter Bulk Space-times. Springer Proceedings in Mathematics and Statistics* **36** (2013) 215-230, ed. V. Dobrev, Springer (arxiv:1112.2872[hep-th]).

By E.I. Guendelman and A. Kaganovich (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2011.

31. *Dynamical Couplings, Dynamical Vacuum Energy and Confinement/Deconfinement from  $R^2$ -Gravity. Phys. Lett. B* **718** (2013) 1099-1104 (arxiv:1207.6775[hep-th]).

By E.I. Guendelman and A. Kaganovich (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2012.

32. *Gravity, Nonlinear Gauge Fields and Charge Confinement/Deconfinement. in “Seventh Mathematical Physics Meeting”*, pp.197-213, B. Dragovic and Z. Rakic (eds.), Belgrade Inst. Phys. Press, 2013 (arxiv:1211.6670[hep-th]).

By E.I. Guendelman and A. Kaganovich (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2012.

33. *Charge-Confining Gravitational Electrovacuum Shock Wave, Mod. Phys. Lett. B* **29** (2014) 1450020 (arxiv:1310.1558[hep-th]).

By E.I. Guendelman (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2013.

34. *Dynamical Volume Element in Scale-Invariant and Supergravity Theories, Bulg. J. Phys.* **40** (2013) 121-126 (arxiv:1310.2772[hep-th]).

By E.I. Guendelman and M. Vasioun (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2013.

35. *Lightlike Membranes in Black Hole and Wormhole Physics, and Cosmology, Bulg. J. Phys.* **40** (2013) 134-140 (arxiv:1310.5334[hep-th]).

By E.I. Guendelman and A. Kaganovich (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2013.

36. *Dynamical Couplings and Charge Confinement/Deconfinement from Gravity Coupled to Nonlinear Gauge Fields, Bulg. J. Phys.* **40** (2013) 127-133 (arxiv:1310.5337[hep-th]).

By E.I. Guendelman and A. Kaganovich (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2013.

37.  *$f(R)$ -Gravity: “Einstein Frame” Lagrangian Formulation, Non-Standard Black Holes and QCD-like Confinement/Deconfinement, in Springer Proceedings in Mathematics and Statistics, Vol.*

111, ed. V. Dobrev (Springer, Tokyo, Heidelberg) 2015 (arxiv:1312.3083[hep-th]).

By E.I. Guendelman and A. Kaganovich (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2013.

38. *A New Mechanism of Dynamical Spontaneous Breaking of Supersymmetry*, *Bulg. J. Phys.* **41** (2014) 123-129 (arxiv:1404.4733).

By E.I. Guendelman and M. Vasilhoun (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2014.

39. *Unification of Inflation and Dark Energy from Spontaneous Breaking of Scale Invariance*, in “*Eight Mathematical Physics Meeting*”, pp.93-103, B. Dragovic and I. Salom (eds.), Belgrade Inst. Phys. Press, 2015 (arxiv:1407.6281v3 (2015)).

By E.I. Guendelman (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2015.

40. *Emergent Cosmology, Inflation and Dark Energy from Spontaneous Breaking of Scale Invariance*, talk at *8th Summer School and Conference on Modern Mathematical Physics*, Aug 2014 Belgrade (Serbia), arxiv:1408.5344v2.

By E.I. Guendelman and A. Kaganovich (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2014.

41. *Emergent Cosmology, Inflation and Dark Energy*, *Gen. Rel. Grav.* **47** (2015) art. 10, DOI:10.1007/s10714-015-1852-1 (arxiv:1408.5344v4 [gr-qc] (2015)).

By Eduardo Guendelman (Ben-Gurion Univ., Beer-Sheva), Ramon Herrera (Pontificia Universidad Catolica de Valparaiso), Pedro Labrana (Universidad del Bio Bio), Emil Nissimov and Svetlana Pacheva (Inst. Nucl. Res., Sofia), 2014, 2015.

42. *A New Venue of Spontaneous Supersymmetry Breaking in Supergravity*, in “*Eight Mathematical Physics Meeting*”, pp.105-115, B. Dragovic and I. Salom (eds.), Belgrade Inst. Phys. Press, 2015 (arxiv:1501.05518 [hep-th]).

By E.I. Guendelman and M. Vasilhoun (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2015.

43. *Vacuum Structure and Gravitational Bags Produced by Metric-Independent Spacetime Volume-Form Dynamics*, *Int. J. Mod. Phys.* **A30** (2015) 1550133 (arxiv:1504.01031 [gr-qc]).

By E.I. Guendelman (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2015.

44. *Metric-Independent Volume-Forms in Gravity and Cosmology*, *Bulg. J. Phys.* **42** (2015) 14-27 (arxiv:1505.07680 [gr-qc]),

By E.I. Guendelman (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2015.

45. *Stable Emergent Universe – A Creation without Big-Bang*, *Astronom. Nachrichten* **336** (2015) 810-814 (arxiv:1507.08878 [hep-th])

By Eduardo Guendelman (Ben-Gurion Univ., Beer-Sheva), Ramon Herrera (Pontificia Universidad Catolica de Valparaiso), Pedro Labrana (Universidad del Bio Bio), Emil Nissimov and Svetlana Pacheva (Inst. Nucl. Res., Sofia), 2015.

46. *Dark Energy and Dark Matter From Hidden Symmetry of Gravity Model with a Non-*

*Riemannian Volume Form*, *EuroPhys. Journ.* **C75** (2015) 472-479 (arxiv:1508.02008 [gr-qc]).

By E.I. Guendelman (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2015.

47. *Cosmology via Metric-Independent Volume-Form Dynamics*, arxiv:1509.01512 [gr-qc], in *Proc. Karl Schwarzschild Meeting 2015*.

By E.I. Guendelman (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2015.

48. *Unified Dark Energy and Dust Dark Matter Dual to Quadratic Purely Kinetic K-Essence*, *EuroPhys. Journ.* **C76**:90 (2016) (arxiv:1511.07071 [gr-qc]).

By E.I. Guendelman (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2015.

49. *Metric-Independent Spacetime Volume-Forms and Dark Energy/Dark Matter Unification*, *Springer Proceedings in Mathematics and Statistics*, vol. 191, ed. V. Dobrev (Springer, Tokyo, Heidelberg) 2016 (arxiv:1512.01395).

By E.I. Guendelman (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2015.

50. *Kruskal-Penrose Formalism for Lightlike Thin-Shell Wormholes*, *Springer Proceedings in Mathematics and Statistics*, vol.191, ed. V. Dobrev (Springer, Tokyo, Heidelberg) 2016 (arxiv:1512.08029).

By E.I. Guendelman (Ben-Gurion Univ., Beer-Sheva), E. Nissimov, S. Pacheva and M. Stoilov (Inst. Nucl. Res., Sofia), 2015.

51. *Gravity-Assisted Emergent Higgs Mechanism in the Post-Inflationary Epoch*, *Int. Journ. Mod. Phys. D25* (2016) 1644008, doi: 10.1142/S0218271816440089, (arXiv:1603.06231 [hep-th]).

By E.I. Guendelman (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2016.

52. *Quintessential Inflation, Unified Dark Energy and Dark Matter, and Higgs Mechanism*, *Bulgarian Journal of Physics* **44** (2017) 15-30 (arxiv:1609.06915).

By E.I. Guendelman (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2016.

53. *Einstein-Rosen 'Bridge' Revisited and Lightlike Thin-Shell Wormholes*, *Bulgarian Journal of Physics* **44** (2017) 85-98 (arxiv:1611.04336).

By E.I. Guendelman (Ben-Gurion Univ., Beer-Sheva), E. Nissimov, S. Pacheva and M. Stoilov (Inst. Nucl. Res., Sofia), 2016.

54. *Quintessence in Multi-Measure Generalized Gravity Stabilized by Gauss-Bonnet/Inflaton Coupling*, arxiv:1709.03786, to appear in *Bulgarian Journal of Physics* **44** (2017)

By E.I. Guendelman (Ben-Gurion Univ., Beer-Sheva), E. Nissimov and S. Pacheva (Inst. Nucl. Res., Sofia), 2017.