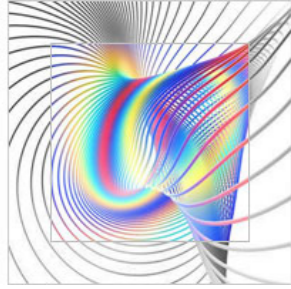





















Higher Spin Theory and Holography

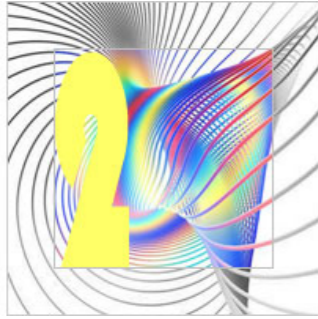
4 years of progress on earlier topics
and interesting new developments



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G.Barnich <i>(International Solvay Inst., Brussels, Belgium)</i>	The quantum Coulomb solution as a coherent state of unphysical photons. A physical toy model for black hole microstates	
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K.Alkalaev <i>(Lebedev Physical Inst., Moscow)</i>	On AdS(2) higher spin gravity	
V.Didenko <i>(Lebedev Physical Inst., Moscow)</i>	Note on a black brane in four dimensions	
O.Gelfond <i>(NIISI, Moscow)</i>	Higher-rank fields and currents	
M.Grigoriev <i>(Lebedev Physical Inst., Moscow)</i>	Conformal (non)invariance of the maximal depth partially massless fields	
E.Ivanov <i>(JINR, Dubna)</i>	SU(2 1)- supersymmetric quantum mechanics	
R.Metsaev <i>(Lebedev Physical Inst., Moscow)</i>	Mixed-symmetry fields in AdS(5), conformal fields and AdS/CFT	
N.Misuna <i>(Lebedev Physical Inst., Moscow)</i>	Off-shell scalar supermultiplet in the unfolded dynamics approach	
M.Vasiliev <i>(Lebedev Physical Inst., Moscow)</i>	Recent developments in higher-spin gauge fields theory	




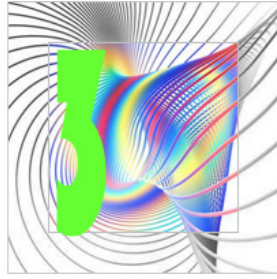
Higher Spin Theory and Holography

June 2-4, 2015 / Lebedev Institute / Moscow

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E.Joung (Seoul National Univ., Korea)	Scatterings by higher spin exchange	
A.Petkou (Inst. of Theoretical Physics, Aristotle Univ. of Thessaloniki, Greece)	Holographic aspects of large-N Vector O(N) Models	
D.Ponomarev (Ludwig-Maximilians Univ., Munich, Germany)	Towards holographic higher-spin interactions	
E.Skvortsov (Max Planck Inst., Potsdam, Germany)	Interactions in 4d Vasiliev theory	
D.Sorokin (INFN, Padua, Italy)	T-duality of AdS(d) x S(d) x M(10-2d) superstrings	
T.Strobl (Lyon Univ., France)	Supergeometry for higher gauge theories	
M.Taronna (Max Planck Inst., Potsdam, Germany)	Remarks on Vasiliev's equations to the second order	
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R.Metsaev (Lebedev Physical Inst., Moscow)	AdS/CFT and conformal fields	
N.Misuna (Lebedev Physical Inst., Moscow)	Black hole charge from the unfolded dynamics approach	
O.Shaynkman (Lebedev Physical Inst., Moscow)	Fradkin-Tseytlin equations unfolded	
M.Vasiliev (Lebedev Physical Inst., Moscow)	Star-Product Functions in Higher-Spin Theory and Locality	




















Higher Spin Theory and Holography

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L.Bonora (SISSA, Trieste, Italy)	Odd parity correlators in 3d and higher spin currents	
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E.Joung (Seoul National Univ., Korea)	Rainbow valley of colored (HS) gravity	
D.Ponomarev (Imperial College, London, UK)	Quartic interactions in higher-spin gravity from conformal field theory	
E.Skvortsov (Max Planck Inst., Potsdam, Germany)	Breaking of HS symmetry and anomalous dimensions of HS currents	
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M.Taronna (Max Planck Inst., Potsdam, Germany)	Pseudo-local theories on AdS: a functional class proposal	
A.Tseytlin (Imperial College, London, UK)	Comments on tensionless strings	
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V.Didenko (Lebedev Physical Inst., Moscow)	On homotopy operators in higher-spin theory	
O.Gelfond (NIISI, Moscow)	Conserved higher-spin charges in AdS(4)	
M.Grigoriev (Lebedev Physical Inst., Moscow)	Conformal gauge fields as boundary values	
A.Koribut (Moscow Inst. of Physics and Technology)	Covariant structure constants for deformed oscillator algebra	
R.Metsaev (Lebedev Physical Inst., Moscow)	BRST, AdS/CFT and conformal fields	
K.Stepanyantz (Moscow State Univ.)	Higher covariant derivative regularization in supersymmetric theories	
Y.Goncharov, M.Vasiliev (Lebedev Physical Inst., Moscow)	Higher-spin fields and charges in periodic twistor space	
Yu.Zinoviev (IHEP, Serpukhov)	Partially massless spin 3 in the Fradkin-Vasiliev formalism	

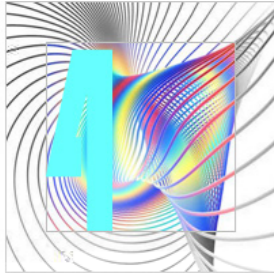
Lectures for young scientists

X.Bekaert
(Tours Univ., CNRS, France)

V.Didenko
(Lebedev Physical Inst., Moscow)

The spin: from quantum tops to elementary particles

Hidden symmetries of black holes



4th International **hStH-4** Conference

Higher Spin Theory and Holography

May 30 - June 1, 2016 / Lebedev Institute / Moscow

R.Metsaev
(Lebedev Physical Inst., Moscow)

Ordinary-derivative approach to long conformal fields

N.Misuna
(Moscow Inst. of Physics and Technology)

Perturbative analysis in higher-spin theories

M.Vasiliev
(Lebedev Physical Inst., Moscow)

Current interactions from nonlinear higher-spin equations



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X.Bekaert
(Tours Univ., CNRS, France)

An action principle of bosonic and fermionic continuous-spin particles

R.Bonezzi
(Univ. of Mons, Belgium)

An action for matter coupled higher spin gravity in three dimensions



A.Dymarsky
(Univ. of Kentucky, USA)

Conserved spinning fields in conformal field theories



C.Iazeolla
(Marconi Univ., Rome, Italy)

Cartan subalgebras of $sp(4;C)$ and exact solutions to Vasiliev's 4D equations



E.Joung
(Seoul National Univ., Korea)

One-loop test of free adjoint model holography



K.Mkrtchyan
(Seoul National Univ., Korea)

Covariant vertices vs amplitudes in 4d

E.Skvortsov
(Ludwig-Maximilians Univ. Munich, Germany)

Correlation functions in tensorial spaces

D.Sorokin
(INFN, Padua, Italy)

Volkov-Akulov goldstini, branes and spontaneously broken supergravity



P.Sundell
(Andres Bello Natl. Univ., Santiago, Chile)

Higher spins and topological open strings

M.Taronna
(Brussels Univ., Belgium)

Cubic interactions in higher-spin theory form CFT



A.Tseytlin
(Imperial College, London, UK)

Generalized type II equations and deformed AdS x S models



K.Alkalaev
(Lebedev Physical Inst., Moscow)

Holographic interpretation of toroidal blocks in the semiclassical limit



I.Arefeva
(Steklov Mathematical Inst., Moscow)

Global holographic effects of defects



L.Bork
(Alikhanov Inst. for Theoretical and Experimental Physics, Moscow / Center for Fundamental and Applied Research, All-Russia Inst. of Automatics, Moscow)

Grassmannian integral for form factors in N=4 SYM



V.Didenko
(Lebedev Physical Inst., Moscow)

Conserved charges in HS theory



O.Gelfond
(NIISI, Moscow)

Unfolded form of current interactions of 4d higher-spin fields



A.Gorsky
(Inst. for Information Transmission Problems, Moscow)

Instanton- torus knot duality in SYM theory



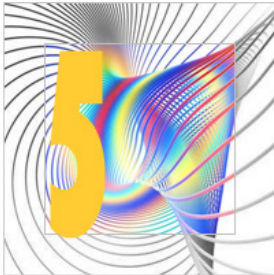
M.Grigoriev
(Lebedev Physical Inst., Moscow)

Presymplectic structures and intrinsic Lagrangians



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Last update: June 14, 2016



Higher Spin Theory and Holography

November 30 - December 2, 2016 / Lebedev Institute / Moscow

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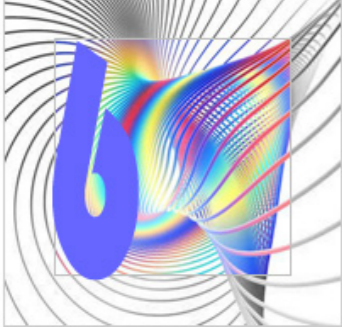
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T.McLoughlin (Trinity College, Dublin, Ireland)	Twistors, conformal higher spin theory and scattering amplitudes	
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D.Polyakov (Sichuan Univ., China; Sogang Univ., Seoul, Korea)	Counting higher spin irreps from string field theory	
D.Ponomarev (Imperial College, London, UK)	Light-front higher-spin theories in flat space	
E.Skvortsov (Ludwig-Maximilians Univ. Munich, Germany)	Higher-spin currents in (Chern-Simons) vector-models and AdS/CFT	
E.Skvortsov (Ludwig-Maximilians Univ. Munich, Germany)	Exceptional F(4) higher-spin theory in AdS(6) at one-loop and other tests of duality	
M.Taronna (Brussels Univ., Belgium)	Higher-spin algebras, holography and flat space	
A.Tseytlin (Imperial College, London, UK)	Deformations of AdS sigma models and 2d dualities	
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V.Didenko (Lebedev Physical Inst., Moscow)	On local Lorentz symmetry in hs systems	
O.Gelfond (NIISI, Moscow)	Local current interactions from nonlinear higher-spin equations in the one-form sector II	
M.Grigoriev (Lebedev Physical Inst., Moscow)	Comments on conformal higher spins in curved background	
I.Kharuk (Inst. for Nuclear Research, Moscow)	Emergent Lorentz invariance with chiral fermions	
R.Metsaev (Lebedev Physical Inst., Moscow)	Continuous spin field in (A)dS	
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K.Stepanyantz (Moscow State Univ.)	Finiteness of the triple ghost-gauge vertices in N=1 SYM theories	
M.Vasiliev (Lebedev Physical Inst., Moscow)	Local current interactions from nonlinear higher-spin equations in the one-form sector I	

Lectures for young scientists

X.Bekaert (Tours Univ., CNRS, France)	Massless elementary particles with continuous spin
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6th International **hsth-6** Conference

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May 31 - June 2, 2017 / Lebedev Institute / Moscow

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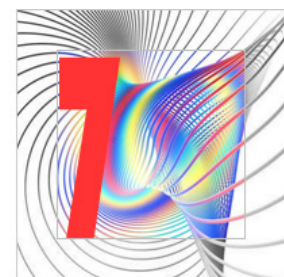
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S.Alekseev (<i>Moscow Inst. of Physics and Technology</i>)	Radiation from a moving mirror and growing loop corrections	
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K.Alkalaev (<i>Lebedev Inst., Moscow</i>)	Various semiclassical limits of torus conformal blocks	
A.Barvinsky (<i>Lebedev Inst., Moscow</i>)	Conformal higher-spin fields and cosmology	
I.Degtev (<i>Lebedev Inst., Moscow</i>)	Quotients of multiparticle higher-spin algebra	
V.Didenko (<i>Lebedev Inst., Moscow</i>)	Progress in higher-spin theory	
M.Grigoriev (<i>Lebedev Inst., Moscow</i>)	Fefferman-Graham construction and higher-spin fields	
R.Metsaev (<i>Lebedev Inst., Moscow</i>)	Fermionic continuous spin field in (A)dS	
N.Misuna (<i>Moscow Inst. of Physics and Technology</i>)	On current contribution to Fronsdal equations	
M.Vasiliev (<i>Lebedev Inst., Moscow</i>)	Current interactions in HS theory and locality	

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M. Bianchi (<i>Univ. of Rome Tor Vergata, INFN, Rome, Italy</i>)	Soft behaviour of scattering amplitudes in diverse contexts
G. Barnich (<i>Univ. Libre de Bruxelles & International Solvay Inst., Belgium</i>)	Introduction to asymptotic current algebras



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Higher Spin Theory and Holography
June 4-6, 2018 / Lebedev Institute / Moscow

E.Skvortsov
(Max Planck Inst., Potsdam, Germany)

Three dimensional bosonization

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Last update: May 30, 2018

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| K.Alkalaev
(Lebedev Inst., Moscow) | Continuous spin fields of mixed-symmetry type |
| I.Arefeva
(Steklov Inst., Moscow) | Holographic renorm group flows |
| R.Bonezzi
(Univ. of Mons, Belgium) | Induced action for conformal higher spins from worldline path integrals |
| V.Didenko
(Lebedev Inst., Moscow) | On locality in HS theory |
| M.Fitkeovich
(Inst. for Nuclear Research, Moscow) | Failure of mean field approximation in weakly coupled dilaton gravity |
| O.Gelfond
(NIISI, Moscow) | Homotopy operators and locality theorems in higher-spin equations |
| Y.Goncharov
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| A.Hancharuk
(Moscow Inst. of Science and Technology) | On the structure of conformal higher spin equations |
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(Marconi Univ., Rome, Italy) | Perturbative schemes, orderings and classes of functions in higher-spin gravity |
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(Lebedev Inst., Moscow) | Shifted homotopies and locality of higher-spin equations |
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| A.Tseytlin
(Imperial College, London, UK) | On non-abelian interactions of self-dual antisymmetric tensors in 6 dimensions |
| M.Vasiliev
(Lebedev Inst., Moscow) | From Coxeter higher-spin theories to strings and tensor models |

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| V.Didenko
(Lebedev Inst., Moscow) | Introduction to elliptic curves |
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Aspects of VEs (locality, etc.)

Vasiliev-1-2-4-5-6; Didenko-3-6; Misuna-5;
Skvortsov-1-2; Taronna-2-3-5

HS unfolded eqs, currents, charges:

Gelfond-1-2-3-4-5; Misuna-1-4-6;
Koribut-3; Goncharov-3; Didenko-4-5; Degtev-6

HS solutions, black holes, ...:

Barnich-1, Didenko-1
Iazeolla-2-3-4-5-6; Misuna-2

HS interaction vertices:

Manvelyan-1; Ponomarev-2-5

HS interactions from AdS/CFT, vectorial AdS/CFT:

Ponomarev-3; Taronna-4; Skvortsov-3-5

Mixed symmetry, conformal, partially massless
free HS in AdS or flat:

Grigoriev-1; Metsaev-1-2-3-4; Francia-3;

Sorokin-3; Mkrtchyan-5

HS symmetries, conf symmetry, AdS/CFT:

Joung-1; Grigoriev-2-3-5

Massless and conformal HS scattering amplitudes:

Joung-2; Mkrtchyan-4;
McLoughlin-5; Taronna-5; Tseytlin-6

Quantum higher spin partition functions: vectorial
and adjoint AdS/CFT:

Beccaria-1; Lal-1; Tseytlin-1-2;
Joung-4-5; Skvortsov-5-6

Conformal HS:

Sorokin-1; Shaynkman-2; Bonezzi-4; Grigoriev-5

Aspects of HS gravity: AdS₂, AdS₃

Alkalaev-1; Joung-3

Continuous HS; particular and massive HS:

Bekaert-4; Metsaev-5-6 ; Zinoviev-1-3; Fedoruk-2

Superstrings: AdS, integrability, tensionless vs HS, etc:

Sorokin-2; Tseytlin-3-4-5; Sundell-4;

Polyakov-5; Alfimov-6

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CFT:

Dymarsky-2-4; Petkou-2; Bonora-3

Various: ambient space, higher g-theories, etc

Bekaert-2; Strobl-2; Grigoriev-4

Supergravity:

Sorokin-4-5

susy QM:

Ivanov-1

Conf inv, cosmology:

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Emergent Lorentz symm:

Kharuk-5

QFT in curved space:

Alekseev-6

THANK YOU!