

НЯКОИ ПО-СЪЩЕСТВЕНИ ЦИТИРАНИЯ НА ТРУДОВЕ

на проф. дфн Емил Нисимов от ИЯИЯЕ-БАН

Забележка: Приведени са примери на цитирания, при които резултатите на кандидата са цитирани изрично и **поименно** вътре в самите текстове на цитиращите автори, вкл. в абстрактите им.

Supersymmetry and Noncompact Groups in Supergravity

John R. Ellis (SLAC), M.K. Gaillard (UC, Berkeley & LBL, Berkeley), Murat Gunaydin (Ecole Normale Superieure), B. Zumino (UC, Berkeley & LBL, Berkeley). Feb 1983. 40 pp.

Published in **Nucl.Phys. B224 (1983) 427-450**

Nissimov and Pacheva [6,7] have extended this analysis to the three dimensional (2 + 1) supersymmetric generalized non-linear sigma-models and shown that in the large N limit these theories have a phase in which the composite gauge fields and their superpartners develop poles at $p^2 = 0$ and become propagating [6,7] with supersymmetry remaining unbroken.

Carlos Castro

On Wilson Loops and Confinement without Supersymmetry

from Composite Antisymmetric Tensor Field theories

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<http://arxiv.org/pdf/hep-th/0204182.pdf>

ABSTRACT

A novel approach that does not rely on supersymmetry, nor in the AdS/CFT correspondence, to evaluate the Wilson loops associated with a gauge theory of area-preserving diffeomorphisms in terms of pure string degrees of freedom is presented. It is based on the Guendelman-Nissimov-Pacheva formulation of composite antisymmetric tensor field theories of volume-preserving diffeomorphisms. Such theories admit p-brane solutions.

'Square Root' of the Maxwell Lagrangian versus confinement in general relativity

Physics Letters B 710 (2012) 489-492

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<http://arxiv.org/pdf/1201.2321.pdf>

ABSTRACT

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Recently, Guendelman, Kaganovich, Nissimov and Pacheva, [Phys.Lett.B704(2011)230] have shown that superposed square root with standard Maxwell Lagrangians yields confining

potentials in spherically symmetric spacetimes with new generalized Reissner-Nordström-de Sitter / -anti-de Sitter black hole solutions.

Journal of Nonlinear Mathematical Physics 2000, V.7, N 4, 433–444. Letter
Real Forms of the Complex Twisted N=2 Supersymmetric Toda Chain Hierarchy in Real N=1 and Twisted N=2 Superspaces

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ABSTRACT

Three nonequivalent real forms of the complex twisted N=2 supersymmetric Toda chain hierarchy (solv-int/9907021) in real N=1 superspace are presented. It is demonstrated that they possess a global twisted N=2 supersymmetry. We discuss a new superfield basis in which the supersymmetry transformations are local. Furthermore, a representation of this hierarchy is given in terms of two twisted chiral N=2 superfields. The relations to the s-Toda hierarchy by H. Aratyn, E. Nissimov and S. Pacheva (solv-int/9801021) as well as to the modified and derivative NLS hierarchies are established.

[On Wilson Loops, large N limit, Confinement and Composite Antisymmetric Tensor Field Theories](#)

[Carlos Castro \(Clark Atlanta U.\)](#). Jun 2001. 43 pp.
Published in **Int.J.Mod.Phys. A19 (2004) 4251-4270**

<http://arxiv.org/pdf/hep-th/0106260.pdf>

2D W_∞ geometry is related to the Fedosov Deformation program associated with the symplectic geometry of the cotangent bundles of 2D Riemannian surfaces; the crucial role that 4D Self Dual Gravity has in the construction of w_∞ gravity actions was emphasized earlier by Hull [18]. Geometric induced actions for W_∞ gravity based on the coadjoint orbit method associated with $SL(\infty, \mathbb{R})$ WZNW models were constructed by Nissimov, Pacheva and Vaysburd [23].

[Branes from Moyal deformation quantization of generalized Yang-Mills theories](#)

[Carlos Castro \(Clark Atlanta U.\)](#)

<http://arxiv.org/pdf/hep-th/9908115.pdf>

A rigorous mathematical foundation is given in [14] and a path integral expression of Kontsevich quantization was presented in [15]. Finally, Deformation Quantization of coadjoint orbits in semisimple groups we refer to [16]. Geometric induced actions for W_1 gravity, an anomalous effective WZNW action, based on a coadjoint orbit method associated with the Moyal

deformations of the algebra of differential operators of the circle was given by Nissimov, Pacheva and Vaysburd [16].

[Conformally invariant sigma models on AdS spaces, Chern-Simons p-branes and W-geometry](#)

[Carlos Castro \(Clark Atlanta U.\)](#)

<http://arxiv.org/pdf/hep-th/9906176.pdf>

W- geometry was viewed as the geometry associated with the Moyal-Fedosov Deformation program associated with the symplectic geometry of the cotangent bundles of 2D Riemannian surfaces; the role of 4D Self Dual Gravity was also emphasized in [18]. Geometric induced actions for W_∞ gravity based on the coadjoint orbit method associated with $SL(1,R)$ WZNW models were constructed by Nissimov, Pacheva and Vaysburd [23].

[Beyond strings, multiple times and gauge theories of area scalings relativistic transformations](#)

[Carlos Castro \(Clark Atlanta U.\)](#). Jul 1997. 18 pp.

Published in **Chaos Solitons Fractals 10 (1999) 295**

<http://arxiv.org/pdf/hep-th/9707171.pdf>

Extended objects can also be interpreted as a gauge theory of volume preserving diffeomorphisms [11,12]. We were able to show in [11] that p-branes can be seen as composite antisymmetric tensor field theories of the volume preserving diffs (of the type proposed by Guendelman, Nissimov and Pacheva [11] ...

[On the integrability aspects of the selfdual membrane](#)

[Carlos Castro \(Texas U. & World Lab, Lausanne\)](#)

<http://arxiv.org/pdf/hep-th/9612241.pdf>

Nissimov and Pacheva have shown that induced W_∞ gravity could be seen as a WZNW model. They derived the explicit form of the Wess-Zumino quantum effective action of chiral W_∞ matter coupled to a chiral W_∞ gravity background. The quantum effective action could be expressed as a geometric action on a coadjoint orbit of the deformed group of area-preserving diffs of the cylinder.

[The Noncritical W\(infinity\) string sector of the membrane](#)

[Carlos Castro \(Texas U. & World Lab, Lausanne\)](#).

<http://arxiv.org/pdf/hep-th/9612160.pdf>

Eqs-(2.9-2.11) are the essential equations that allows to extract the exact quantization of the Toda theory via the W_∞ coadjoint orbit method described by [25]. Nissimov and Pacheva have shown that induced W_∞ gravity could be seen as a WZNW model.

[Incorporating the scale relativity principle in string theory and extended objects](#)
[Carlos Castro](#) (Texas U. & [World Lab, Lausanne](#)).

<http://arxiv.org/pdf/hep-th/9612003.pdf>

This is another corroboration, that the theory of extended objects should be interpreted as a gauge theory of volume preserving diffeomorphisms [11]. It may very well in fact be a composite antisymmetric tensor field theory of the type proposed by Guendelman, Nissimov and Pacheva as we have shown in [11].

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[p-branes as composite antisymmetric tensor field theories](#)

[Carlos Castro](#) (Texas U. & [World Lab, Lausanne](#)). Mar 1996. 15 pp.

Published in **Int.J.Mod.Phys. A13 (1998) 1263-1292**

<http://arxiv.org/pdf/hep-th/9603117.pdf>

ABSTRACT

p'-brane solutions to rank $p + 1$ composite antisymmetric tensor field theories of the kind developed by Guendelman, Nissimov and Pacheva are found when the dimensionality of spacetime is $D = (p + 1) + (p' + 1)$. These field theories possess an infinite dimensional group of global Noether symmetries, that of volume-preserving diffeomorphisms of the target space of the scalar primitive field constituents.

INTRODUCTION

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The aim in the present work is to show that p branes are tightly connected with composite antisymmetric tensor field theories of the volume-preserving diffeomorphism group. Guendelman, Nissimov and Pacheva, GNP [4] presented a new form of Quantum Electrodynamics in which the photons are composites made out of scalar primitive constituents and where the role of local gauge symmetry was traded over to an infinite-dimensional global Noether symmetry: the group of volume-preserving diffeomorphisms of the target space of the scalar primitive constituents.

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