

## Cirilo-Lombardo Diego Julio

Position Phd Student

Bogoliubov Lab. of Theoretical Ph. Dubna

Period: 2004- present



### I Conferences and educational activities

#### Conferences and Other External Scientific Work

*Rotated Charged Black Holes in Einstein-Born-Infeld theories*, Diego Julio Cirilo Lombardo. Presented in: A.I. Akhiezer Memorial Conference: "QED and Statistical Physics". Kharkov (Ucrania), Oct. of 2001.

*The Simple Solution of Relativistic Wave Equations for Charged particles in Constant Electric Field and Pair Production*, Diego Julio Cirilo Lombardo and Yu. P. Stepanovsky. Presented in A.I. Akhiezer Memorial Conference: "QED and Statistical Physics". Kharkov (Ucrania), Oct. of 2001.

Talk given as a Seminar in BLTP-Sector 5 (Gauge Theory and Gravitation, VN Pervushin-N Chernikov) : "*Static and Rotating Black Holes in EBI Theories*". Diego Julio Cirilo-Lombardo, Nov 2003

*On the quantization of the superparticle action in proper time and the Lorentz group  $SO(3,1)$* , Diego Julio Cirilo-Lombardo (Talk). Presented in the 8<sup>th</sup> International Conference: Path Integrals: from quantum information to cosmology. Prague, June 6-10, 2005.

*Non-abelian Born-Infeld action, geometry and supersymmetry*, Diego Julio Cirilo-Lombardo: talk in the Workshop on Gravitational Aspects of Strings and Branes: Gravity, Strings and Gauge Theories, Santiago de Compostela (Spain, 8-11 Feb.2006, Org. By A. Ramallo, J. Mas).

*Quantum field propagator for extended-objects in the microcanonical ensemble and the S-matrix formulation*, Diego Julio Cirilo-Lombardo, Talk in the Seminar Non-perturbative Methods in QFT (Leaders: S. Gerasimov, E. Kuraev, A. Dorokhov, JINR, 22 Feb. 2006).

*Non-abelian Born-Infeld action, geometry and supersymmetry*, Diego Julio Cirilo-Lombardo, Talk in the Seminar Symmetries and Integrable Systems (Leader: A. Sissakian, JINR, 30 June 2006).

*On the Riemannian superspaces, the symmetry group and dimensionality*, talk in the workshop Symmetries and Spin, Charles University, Prague (26-30 July 2006).

Seminars given at the *Physics Department of the Zaragoza University*: on topological theories, d-branes, F-theory and related topics. Scientific supervisors: Profs.L. Boya and M. Asorey (March and April 2007).

*The geometrical properties of the Riemannian superspaces, exact solutions and the mechanism of localization*, presented in The International Conference in Quantum Symmetries and Integrable Systems (Prague, July 2007)

Seminars given at the *Department of theoretical physics of the Centro Brasileiro de Pesquisas fisicas (CBPF)*: On supersymmetrical models, d-branes and Born-Infeld theory. Scientific supervisor Jose A. Helayel-Neto (August 2007).

*Quantum particle on a Möbius strip, coherent states and projection operators*, Presented in: Path Integrals- New Trends and Perspectives International Conference - September 23 -28, 2007 (MIPPKS Dresden, Germany)

*On the non-abelian extensions of the d-branes actions*, presented at the Physics Department of the National Commission of Atomic Energy (Comision Nacional de Energia Atomica-Dec. 4-7, Buenos Aires Argentina).

Seminar given at the *International Center of Relativity and Astrophysics (ICRA-Net)*: Monopole Solutions and Regularity Conditions in Einstein-Born-Infeld Theories. Scientific supervisor: Remo Ruffini (June 8-23, 2008, Pescara, Italy).

## **Other participation in Congresses and workshops**

Guest scientist to THE INTERNATIONAL SCHOOL OF ASTROPHYSICS "DANIEL CHALLONGE": 8<sup>th</sup> course: Phase Transitions in the Early Universe: Theory and Observations. Director: Norma Sanchez, H.de Vega, I. Khalatnikov (Erice, Dec. of 2000). NATO school.

Guest scientist to THE INTERNATIONAL SCHOOL OF COSMOLOGY AND GRAVITATION: «Advances in the Interplay between Classical and Quantum Gravity: Theory and Observations» Director: V. de Sabbata, A. Zhelthukhin (Erice, May of 2001). NATO school

Guest Scientist to: THE INTERNATIONAL SCHOOL OF ASTROPHYSICS "DANIEL CHALLONGE": 9<sup>th</sup> course: the Early Universe and the Cosmic Microwave Background: Theory and Observations. Directors: Norma Sanchez, Yu. Pariskij (Palermo-Sicily, September 2002).

Guest scientist to THE INTERNATIONAL SCHOOL OF COSMOLOGY AND GRAVITATION: 18th Course: «The Gravitational Constant: Generalized Gravitational Theories and Experiments» Director: V. de Sabbata-P.G. Bergmann (Erice, May of 2003). NATO school.

Scientific Secretary in: THE INTERNATIONAL SCHOOL OF ASTROPHYSICS “DANIEL CHALLONGE”: 9<sup>th</sup> Paris Cosmology Colloquium: Physics of the Early Universe Confront Observations. Directors: Norma Sanchez, Hector de Vega (30 June, 1 and 2 of July 2005).

Scientific Secretary in: THE INTERNATIONAL SCHOOL OF ASTROPHYSICS “DANIEL CHALLONGE”: 9<sup>th</sup> course: the Early Universe and the Cosmic Microwave Background: Theory and Observations. Directors: Norma Sanchez, Yu. Pariskij (Palermo-Sicily, September 2002).

Guest Scientist to The Zuoz School in Supersymmetry (Zuoz-Switzerland, 15-21 Aug. 2004).

Guest Scientist to the: Fourth Meeting on Constrained Dynamics and Quantum Gravity, Cala Gonone (Sardinia, Italy, Sept.12-16, 2005, Org. M. Cavaglia).

Guest Scientist to the: Particles and Fields: Classical and Quantum, Conference in Honor of George Sudarshan at Jaca (HU). Spain. Universidad de Zaragoza, September 18-21 2006 (Org. J.L. Boya).

Guest Scientist to the International Workshop: Classical and Quantum Integrable Systems (Dubna, Russia, 22-25 January 2007).

Guest Scientist to The International Workshop: The logarithmic conformal field theories and statistical mechanics (Dubna, Russia, 4-8 June 2007).

Guest Scientist to the International School in Integrable Systems, Prague 2007

Guest Scientist to the International Conference in Quantum Symmetries and Integrable Systems (Prague, July 2007)

Guest Scientist to the International Workshop: Supersymmetries and Quantum Symmetries QSS07 (Dubna, Russia, 30 July-4 August 2007).

#### Other Teaching Duties

Assistantship of Laboratory 2 (biologists and geologists). Period 2001. Facultad de Ciencias Exactas y Naturales, Universidad de Buenos Aires.

Asistantship of: Theory of electronics circuits 1, Chemistry (general and inorganic) and Stability of structures 2. Period 1994-96. Facultad de Ingeniería, Universidad de Moron.

Asistantship of : Stability and aeronautical structures 3, Termodynamics 3. Period 1996. Facultad de Ingeniería Aeronáutica y Espacial, Universidad Tecnológica Nacional (Regional Oeste).

## 2007-2008 List of Publications

*On the Lorentz group  $SO(3,1)$ , geometrical supersymmetric action for particles and square root operators II: Squeezed States and Relativistic Wave Equations*, Diego Julio Cirilo-Lombardo, Phys. Part. Nucl. Lett. v. 4, N3(138), (2007)

Diego Julio Cirilo-Lombardo; *On the mathematical structure and hidden symmetries of the Born-Infeld field equations*, Journal of Math. Phys. **48**, 032301 (2007).

Diego Julio Cirilo-Lombardo; *Non-compact groups, Coherent States, Relativistic Wave equations and the Harmonic Oscillator*. Foundations of Physics **37**: 919-950 (2007).

Diego Julio Cirilo-Lombardo; *Physical coordinates as dynamic variables for the superparticle from its geometrical action*, Romanian Reports in Physics, Vol. 59, No. 4, P. 1111–1117, 2007.

Diego Julio Cirilo-Lombardo and N.G. Sanchez; *Microcanonical model for a gas of evaporating black holes and strings, scattering amplitudes and mass spectrum*, International Journal of Modern Physics **A**, Vol. 23, Issue 20, 975-100 (2008).

Diego Julio Cirilo-Lombardo; *The geometrical properties of Riemannian superspaces, exact solutions and the mechanism of localization*. Physics Letters **B** 661, 186-191 (2008).

Diego Julio Cirilo-Lombardo; *Riemannian superspaces, exact solutions and the geometrical meaning of the field localization*. To appear in: Int. J. Theor. Physics, 2008.

Diego Julio Cirilo-Lombardo and N.G. Sanchez; *Microcanonical model for a gas of evaporating black holes and strings, scattering amplitudes and mass spectrum*, Aug. 2007. e-Print Archive: **hep-th/07080393**