ASESORÍA DE COOPERACIÓN INTERNACIONAL
Curriculum Vitae de Integrante del Equipo Extranjero – Español

1. Actuación Profesional/Local de Trabajo

nombre JORGEALFARO			e-mail JALFARO@UC.CL
entidad PONTIFICIAUNIVERSIDADCATOLICADE CHILE			cargo/función PROFESORTITULAR
división/unidad FACULTADDE FISICA			inicio (mes/año) OCTUBRE1985
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2. Titulación/Formación Académica

grado Ph. D. in Physics	curso Supervisor: Prof. B. Sakita.		período 1977-1983	
	entidad/institución City University of New York	ciudad NewYork	país EEUU	pcia.
grado Licenciado en Fisica,	curso Supervisor: Prof. I. Saavedra.		período 1972-1977	
	entidad/institución Universidad de Chile	ciudad Santiago	país Chile	pcia.
grado	curso		período	
	entidad/institución	ciudad	país	pcia.
grado	curso		período	
	entidad/institución	ciudad	país	pcia.
grado	curso		período	
	entidad/institución	ciudad	país	pcia.

3. Área de Actuación

segmento/actividad	para uso del CNPq
Física de Partículas y Campos, Gravitación Cuántica	

4. Actividad actual

dirección y administración	

investigación y desarrollo	
trabajo técnico/especialización (otras)	

5. Experiencia profesional

5.1. actividades	período

2.EmEmployment History:

- Full Professor since October de 2000.
- Associate Professor March 1988-September 2000.
- Assistant Professor, March 1985-March 1988.
- Postdoctoral Position :Laboratoire de Physique Theorique de l'Ecole Normale Superieure, Paris, October 1983-September 1985.

3. PrPrimary Research Interests

TheTheoretical High Energy Physics, Cosmology, Non-Perturbative Metmethods in Quantum Field Theory, Quantum Gravity and Strings.

4. ProProfessional Recognition

- **Research Grants from Fondecyt, Fundación Andes(Chile), CNRS, Ecos (France), Programa de Cooperación Científica con Iberoamérica del gobierno español, European Community,CERN, Conacyt(Mexico), ICTP(Italy), The Niels Bohr Institute(Denmark).**
- Referee of papers in :Journal of Mathematical Physics.,Nuclear Physics B, Physical Review and Physical Review Letters, JHEP, Classical and Quantum Gravity.
- Reviewer of the Mathematical Reviews.
- Referee of research projects for Fondecyt(Chile), Fundación Andes, Several Faculty of Physics in Chile, Research Corporation (USA), ANEP(Spain).
- Member of the FONDECYT Physics and Astronomy Study Group 1997-1998.

5. Educational and Outreach Activities

- Teaching of Physics courses for Engineering and Physics students at the undergraduate and graduate level.
- Director Subrogante de Docencia (December 1989).
- Director de Docencia from August 1990 till November 1991. Proposal and signature of the agreement with Facultad de Ingeniería (PUC), to permit that engineering students can study a Master degree in Physics, simultaneouly with their degree in Engineering.
- Coordinador del programa EXPLORA (Conicyt) al interior de la PUC., Octubre 1995.
- Secretario de la Sociedad Chilena de Física, 1996-1997.

• Organizer of the Chilean Meeting on High Energy Physics 1996-2004. • Organizer of The Spring-Fall School in Advanced Topics in High Energy Physics (PUC).	

6. Producción Científica, Tecnológica y Artística Complementaria

	cantidad		cantidad
1. artículos científicos en periódicos especializados nacionales		6. comunicación en congresos, seminarios, charlas, etc.	80
2. artículos científicos en periódicos especializados extranjeros	47	7. participación en exposiciones, presentaciones, etc.	
3. artículos de divulgación científica	1	8. películas, videos, audiovisuales realizados	
4. tesis defendidas		9. patentes obtenidas	
5. tesis dirigidas	12	10. libros publicados	

7. Principales publicaciones:
Listar las principales publicaciones realizadas, incluyendo, sobretodo, las más importantes para el proyecto en cuestión.

Ver más abajo

8. Idiomas

Marcar la columna apropiada: P – poco R – razonablemente B - bien

Idioma	habla	lee	escribe	idioma	habla	Lee	escribe
Castellano	B	B	B	Inglés	B	B	B
Francés	B	B	B				

Publications in International Refereed Journals.

The most representative papers in the last 6 years are in bold face. Citations are as provided by SPIRES HEP on June 5,2006

1. J. Alfaro, I. Saavedra, "Muon-Electron Mass Ratio in a semiclassical model", Lett, al Nuovo Cimento 28(1980)385-389.
2. J. Alfaro and B. Sakita, "Apparent Symmetry Breaking and its Restoration in Path Integral Variational Method". Z.Phys.C17(1983) 171-173. (1 citation)
3. J. Alfaro and B. Sakita, "Derivation of Quenched Momentum

Prescription by Means of Stochastic Quantization", Phys. Lett. 121B (1983)339-344. (54 citations)

4. J. Alfaro, "Stochastic Quantization and the Large N reduction of U (N) Gauge Theory", Phys. Rev. D28(1983)1001-1009. (11 citations)
5. J. Alfaro, R.C.Brower and M. B. Gavela, "Rigorous QCD inequalities and the rule", Phys. Lett.147B(1984)357-360. (12 citations)
6. J.Alfaro, "An ansatz for the master field", Phys. Lett.148B(1984)157-165. (9 citations)
7. J. Alfaro, R. Jengo and N. Parga, "Evaluation of Critical Exponents on the basis of Stochastic Quantization" Phys. Rev. Lett. 54(1985) 369-372. (16 citations)
8. J. Alfaro, "Stochastic Analytic Regularization", Nucl. Phys. B253 (1985)464-476. (32 citations)
9. J. Alfaro and M. B. Gavela, "Chiral Fermions in Stochastic Quantization", Phys. Lett. 158B(1985)473-476. (34 citations)
10. J. Alfaro, "On the Stochastic Approach to the large N limit", Phys. Rev. D33(1986)1187-1190. (3 citations)
11. J. Alfaro and Luis Huerta, "Stable Field Configurations in the large N Limit:Stochastic Approach", Phys. Rev. D37(1988)2225-2230.(1 citation)
12. J. Alfaro, "Hidden Supersymmetry and Large N", Phys. Lett. B200 (1988)80-84.(4 citations)
13. J.Alfaro,L.F.Urrutia and J.D. Vergara, "Extended Definition of the Regulated Jacobian in The Path Integral Calculation of Anomalies", Phys. Lett. B202(1988)121-126. (7 citations)
14. S. Bacci, J. Alfaro, C. Wiecko and N. Parga, "Numerical Analysis of a Neural Network with Hierarchically Organized Patterns", Journal de Physique 50(1989)757-767.
15. J. Alfaro and P.H. Damgaard, "Schwinger Dyson Equations as Supersymmetric Ward Identities", Phys. Lett. B222(1989)425-428. (28 citations)
16. J. Alfaro and J. C. Retamal, "Supersymmetry and Large N limit in a zero- dimensional two matrix model", Phys. Lett. B222(1989)429-432. (10 citations)
17. J. Alfaro, P.H. Damgaard, J. L. Latorre and D.Montano, "On the BRST invariance of field deformations", Phys. Lett. B233(1989)153-157. (20 citations)
18. J. Alfaro and P. H. Damgaard, "Field transformations, Collective coordinates and BRST invariance", Annals of Physics 202(1990)398-435. (50 citations)
19. J. Alfaro, "Stochastic Quantization and the Large N Limit of Quantum Field Theories",Progress of Theoretical Physics (Supplement) 111 (1993)401-416. (2 citations)

20. J.Alfaro and P.H. Damgaard, BRST symmetry of field redefinitions, Ann. Phys.(N.Y.) 220(1992)188-211.(11 citations)
21. J. Alfaro, "Large-N limit of the two-Hermitian-matrix model by the hidden BRST method", Phys.Rev.D47(1993)4714-4722. (21 citations)
22. J.Alfaro and P.H. Damgaard,The d=1 matrix model and the renormalization group ,Phys. Lett. B289(1992)342-346. (13 citations)
23. J.Alfaro and P.H. Damgaard, Origin of Antifields in the Batalin-Vilkovisky Lagrangian Formalism, Nucl. Phys. B404(1993)751-793. (32 citations)
24. J. Alfaro, "Loop equations for the d-dimensional One Hermitian matrix model", Phys. Lett. B317(1993)550-558.
25. J. Alfaro and P.H. Damgaard,"Generalized Lagrangian Master Equations", Phys. Lett. B334(1994)369-377.(19 citations)
26. J. Alfaro, R. Medina and L.F. Urrutia,"The Itzykson-Zuber Integral for ", J. Math. Phys. 36(1995)3085-3093.(8 citations)
27. J. Alfaro, R. Medina and L.F. Urrutia, "The Orthogonality Relations for the supergroup", J. Phys. A: Math. Gen. 28(1995)4581-4588.(2 citations)
28. J. Alfaro and P.H. Damgaard, "Symmetries and the Antibracket", Nucl. Phys. B455(1995)409-439. (12 citations)
29. J. Alfaro and P.H. Damgaard, "Non-abelian Antibrackets", Phys. Lett. B369(1996)289-294.(12 citations)
30. K. Bering, P. H. Damgaard, J. Alfaro, "Algebra of Higher Antibrackets" Nucl.Phys.B478(1996)459-504. (21 citations)
31. J. Alfaro, K. Bering, P. H. Damgaard, "BRST Formulation of Partition Function Constraints", Mod. Phys. Lett. A12(1997)1119-1126. (1 citation)
32. J. Alfaro, R. Medina y L.F. Urrutia, Orthogonality relations and supercharacter formulas of representations,J. Math. Phys. 38 (1997) 5319-5349.
33. J. Alfaro, O. Cubero and L.F. Urrutia Quantum description of the orientational degrees of freedom in a biaxial nematic liquid, , Physica A272(1999)314-329.
34. J. Alfaro, A. Dobado and D. Espriu, Chiral Lagrangians and the QCD String, Phys.Lett.B460(1999)447-454. (9 citations)
35. **J. Alfaro, H. Morales-Técotl and L.F. Urrutia, Quantum Gravity Corrections to Neutrino Propagation, Phys. Rev. Lett.84(2000)2318-2321.(155 citations)**
36. Jorge Alfaro, Pedro Labraña, "SEMICLASSICAL GAUGE THEORIES", Phys.Rev.D65:045002,2002.
37. **Jorge Alfaro, Hugo A. Morales-Tecotl Luis F. Urrutia, "LOOP**

QUANTUM GRAVITY AND LIGHT PROPAGATION", Phys.Rev.D65:103509,2002. (113 citatios)

38. Jorge Alfaro, Gonzalo Palma, "LOOP QUANTUM GRAVITY CORRECTIONS AND COSMIC RAYS DECAYS", Phys.Rev.D65:103516,2002. (44 citations)

39. J. Alfaro, L. Balart, A.A. Andrianov , D. Espriu ,HADRONIC STRING, CONFORMAL INVARIANCE AND CHIRAL SYMMETRY", Int.J.Mod.Phys.A18:2501-2540,2003.(8 citations)

40. LOOP QUANTUM GRAVITY AND ULTRAHIGH-ENERGY COSMIC RAYS. Jorge Alfaro, Gonzalo Palma, Phys.Rev.D67:083003,2003.(46 citations)

41. QUANTUM GRAVITY AND SPIN 1/2 PARTICLES EFFECTIVE DYNAMICS. Jorge Alfaro, Hugo A. Morales-Tecotl, Luis F. Urrutia, Phys.Rev.D66:124006,2002.(52 citations)

42. MASS GENERATION AND SYMMETRY BREAKING IN CHERN-SIMONS SUPERGRAVITY, J. Alfaro and Maximo Banados, Phys.Rev.D68:085013,2003.(2 citations)

43. ON NONABELIAN HOLONOMIES, J. Alfaro, H.A. Morales-Tecotl, M. Reyes, L.F. Urrutia, J.Phys.A36:12097-12107,2003.(2 citations)

44. ON ALTERNATIVE APPROACHES TO LORENTZ VIOLATION INVARIANCE IN LOOP QUANTUM GRAVITY INSPIRED MODELS, J. Alfaro, M. Reyes, H. A. Morales-Tecotl and L.F. Urrutia , Phys.Rev.D70:084002,2004 (6 citations).

45. EXTENDED QCD(2) FROM DIMENSIONAL PROJECTION OF QCD (4), J. Alfaro, P. Labrana and A. A. Andrianov ,JHEP 0407:067,2004 (2 citations).

46. Quantum Gravity and Lorentz invariance violation in the Standard Model, J. Alfaro, Phys.Rev.Lett.94:221302,2005.(11 citations).

47. Quantum Gravity Induced Lorentz Invariance Violation in The Standard Model: Hadrons, J. Alfaro, Phys.Rev.D72:024027,2005.(3 citations)

Reeditions: Some of my papers has been reedited in books that contain the most relevant publications in the area:

-"Stochastic Quantization", Editors: P.H. Damgaard and H. Huffel, World Scientific (1988). This book contain two of my papers: J. Alfaro, R. Jengo and N. Parga, Phys. Rev. Lett. 54(1985)369; and J. Alfaro and B. Sakita, Phys. Lett. 121B (1983)339.

-"A quest for Symmetry", Editors: K. Kikkawa, M. Virasoro, S. Wadia, World Scientific Series in 20th Century Physics, Vol. 22 (1999). This book contains J. Alfaro and B. Sakita, Phys. Lett. 121B (1983)339.

Seminars: Virginia State University, City College of New York, Brown University, MIT, University of California at Berkeley (USA), UNAM, UAM (Mexico), Centro Atómico Bariloche (Argentina),Universidad Autónoma de Madrid, Universidad de Barcelona, Universidad de Zaragoza, Universidad de Santiago de Compostela, Universidad de Granada (Spain), Ecole Normale Superieure (Paris), CEN Saclay, Universite de Marseille, Orsay (France), ICTP (Italy), The Niels Bohr Institute (Denmark), Charles University (Prague), CERN.