

# 31st International Colloquium on Group Theoretical Methods in Physics



## SCHEDULE(S)

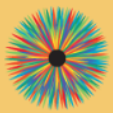
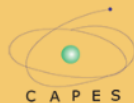
### Details

Rio de Janeiro, 19-25 June 2016



Ministério da  
Ciência, Tecnologia  
e Inovação

GOVERNO FEDERAL  
**BRASIL**  
PÁTRIA EDUCADORA



Museu do **Amanhã**



The Abdus Salam  
International Centre  
for Theoretical Physics



**Springer**

GROUP 31 – TIMETABLE JUNE 19 - 25

	Sunday 19	Monday 20	Tuesday 21	Wednesday 22	Thursday 23	Friday 24	Saturday 25
8:00 am							
8:30 am							
9:00 am		Registration Casa Rui Barbosa	At CBPF	At CBPF	At CBPF	Casa Rui Barbosa	Museu do Amanhã
9:30 am			M5 ▶ Room A P1&P3 ▶ Room C M4 ▶ Room B	Arno Bohm 3.3.1	M6 ▶ Room A P4 ▶ Room E M3 ▶ Room C M2 ▶ Room B	G. Amelino -Camelia 3.2.1	
10:00 am		Opening session		Poster Clips		Antti Niemi 3.2.4	
10:30 am		Jorge Zanelli 3.2.9	Coffee Break		Coffee Break		
11:00 am		Coffee Break	M5 ▶ Room A P1&P3 ▶ Room C M4 ▶ Room B P6 ▶ Room D	Coffee Break	M6 ▶ Room A P4 ▶ Room E M3 ▶ Room C M2 ▶ Room B	Coffee Break	
11:30 am		Pedro Vieira 3.2.7		M5 ▶ Room D M6 ▶ Room A M3 ▶ Room C P4&P5 ▶ Room E P6&P7 ▶ Room B		Vasily Pestun 3.1.2	
12:00 am		Lunch	Lunch	Group Photo !!	Lunch	Lunch	
12:30 am				Free afternoon			
1:00 pm							
1:30 pm							
2:00 pm							
2:30 pm		Constantino Tsallis 3.2.6	M6 ▶ Room A P1&P3 ▶ Room C M4 ▶ Room B P6 ▶ Room D		M5 ▶ Room D M1 ▶ Room C P5 ▶ Room E M2 ▶ Room B M6 ▶ Room A	Vicenzo Vitelli 3.2.8	
3:00 pm		Sylvie Paycha 3.2.5	Coffee Break		Coffee Break	Reimundo Heluani 3.2.3	Large Audience Conference 3.5.1 J. A. Helayël Neto
3:30 pm							
4:00 pm		Coffee Break	M6 ▶ Room A P6&P7 ▶ Room D		M5 ▶ Room D M1 ▶ Room C P5 ▶ Room E M2 ▶ Room B M6 ▶ Room A	Coffee Break	
4:30 pm	Registration Welcome Party at CBPF	Laurent Freidel 3.2.2				M. Angelova 3.4.1	
5:00 pm		G. A. Goldin 3.4.2				Closing session	
5:30 pm							
6:00 pm				Weyl&Wigner Ceremony Museu do Amanhã			
6:30 pm							
7:00 pm					Cocktail & Music CBPF		
7:30 pm				bus			
8:00 pm				Dinner Fogo de Chão			
8:30 pm							
9:00 pm							

▶ Casa Rui Barbosa: Rua São Clemente, 134 - Botafogo

▶ Museu do Amanhã: Praça Mauá, 1 - Centro

▶ Centro Brasileiro de Pesquisas Físicas (CBPF): Rua Dr. Xavier Sigaud, 150 - Urca

Room A ▶ Auditório Ministro J. A. Lins de Barros Room B ▶ Auditório 3rd Floor

Room C ▶ Audit. 2nd Floor Room D ▶ Audit. 6th Floor Room E ▶ Audit. 5th Floor

## GROUP 31 – PARALLEL SESSIONS TUESDAY 21 JUNE

	M4 Room B	M5 Room A	M6 Room A	P1&P3 Room C	P6&P7 Room D
9:00 am	J. Bengeloun 7.1.1	N. Aizawa 8.1.1			
9:30 am	N. Pinto Neto 7.1.6	N. Atakishiyev 8.1.14		P1 J. N. S. Filho 10.1.1	
10:00 am	P. Malkiewicz 7.1.5	L. Vinet 8.1.12		P3 E. Ley-Koo 10.1.2	
10:30 am	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break
11:00 am	D. Galtsov 7.1.4	J. F. Gomes 8.1.4		P3 L. Duarte 11.1.4	Z. Mouayn 14.1.5
11:30 am	P. K. Osei 7.1.11	A. L. Retore 8.1.7		P3 V. Dvoeglazov 11.1.6	T. Koide 14.1.10
12:00 am	M. Campiglia 7.1.3	N. Spano 8.1.10		P3 P. Kielanowski 11.1.5	G. A. Goldin 14.1.6
12:30 am	Lunch	Lunch	Lunch	Lunch	Lunch
1:00 pm					
1:30 pm					
2:00 pm	F. Sugino 7.1.8		R. Kerner 9.1.12	P3 N. Gromov 11.1.3	P. W. Bryant 14.1.4
2:30 pm	M. Valenzuela 7.1.9		M. A. del Olmo 9.1.14	P3 L. Melo Abreu 11.1.7	E. Drigo Filho 14.1.3
3:00 pm	M. Maira da Silva 7.1.10		H. de Guise 9.1.6		
3:30 pm	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break
4:00 pm			R. Léandre 9.1.2		
4:30 pm			E. Ley-Koo 9.1.13		
5:00 pm					
5:30 pm					
6:00 pm					

Centro Brasileiro de Pesquisas Físicas (CBPF): Rua Dr. Xavier Sigaud, 150 - Urca

- ▶ Room A: Auditório Ministro João Alberto Lins de Barros
- ▶ Room B: Auditório Third Floor
- ▶ Room C: Auditório Second Floor
- ▶ Room D: Auditório Sixth Floor

## GROUP 31 – PARALLEL SESSIONS WEDNESDAY 22 JUNE

	M3 Room C	M5 Room D	M6 Room A	P4&P5 Room E	P6&P7 Room B
9:00 am					
9:30 am					
10:00 am					
10:30 am					
11:00 am	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break
11:30 am	A. Borowiec I 6.1.2	M. de Montigny 8.1.6	K. Górska 9.1.5	P4 G. Sicuro 12.1.4	J. Guerrero 14.1.8
12:00 am	M. A. C. Torres 6.1.1	J. Cao 8.1.3	A. Horzela 9.1.9	P5 S. Dey I 13.1.1	G. A. Goldin 14.1.7
12:30 am		G. Pogosyan 8.1.8	S. Khodae 9.1.17		M. Novaes 15.1
1:00 pm	Group Photo!!	Group Photo!!	Group Photo!!	Group Photo!!	Group Photo!!
1:30 pm	Free afternoon	Free afternoon	Free afternoon	Free afternoon	Free afternoon
2:00 pm					
2:30 pm					
3:00 pm					
3:30 pm					
4:00 pm					
4:30 pm					
5:00 pm					
5:30 pm					
6:00 pm					

Centro Brasileiro de Pesquisas Físicas (CBPF): Rua Dr. Xavier Sigaud, 150 - Urca

- ▶ Room A: Auditório Ministro João Alberto Lins de Barros
- ▶ Room B: Auditório Third Floor
- ▶ Room C: Auditório Second Floor
- ▶ Room D: Auditório Sixth Floor
- ▶ Room E: Auditório Fifth Floor

## GROUP 31 – PARALLEL SESSIONS THURSDAY 23 JUNE

	P4&P5 Room E	M3&M1 Room C	M2 Room B	M5 Room D	M6 Room A
9:00 am					P. J. Moylan 9.1.8
9:30 am	P4 R.P. Mondaini 12.1.7	M3 A. Borowiec II 6.1.3	P. D. Prester 5.1.1		C. Bai 9.1.1
10:00 am	P4 M. Angelova 12.1.1	M3 A. Kornev 6.1.4	B. Schroer I 5.1.8		M. Novaes 9.1.7
10:30 am	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break
11:00 am	P4 K. Górská 12.1.3	M3 R. Kullock 6.1.5	S. Faci 5.1.5		R. Oste 9.1.15
11:30 am	P4 E. M. F. Curado 12.1.2	M3 S. B. Sontz 6.1.6	G. B. de Gracia 5.1.6		F. Pan 9.1.11
12:00 am	P4 A. Vourdas 12.1.6		L. Martinovic 5.1.7		K. P. Sousa de Brito 9.1.16
12:30 am	Lunch	Lunch	Lunch	Lunch	Lunch
1:00 pm					
1:30 pm					
2:00 pm	P5 L. Vinet 13.1.5	M1 D. Galtsov 4.1.1	N. Khusnutdinov 5.1.2	J. Links 8.1.5	S. Berceanu 9.1.18
2:30 pm	P5 O. Castaños 13.1.4	M1 Z. Aghaebrahimi 4.1.6	V. Dvoeglazov 5.1.4	A. Roa Aguirre 8.1.9	J. Van der Jeugt 9.1.20
3:00 pm	P5 K. B. Wolf 13.1.7	M1 J. César Fabris 4.1.7	B. Schroer II 5.1.9	A. Pupasov-Maksimov 8.1.11	M. Szajewska 9.1.19
3:30 pm	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break
4:00 pm	P5 A. Vourdas 13.1.6	M1 B. Giacchini 4.1.2	I. E. da Cunha 5.1.11	D. J. Fernández Cabrera 8.1.2	A. Yakhno 9.1.10
4:30 pm	P5 S. Chávez-Cerda 13.1.8	M1 Satheeshkumar 4.1.3	N. L. de Holanda 5.1.3	W. Yang 8.1.13	J.P. Gazeau 14.1.2
5:00 pm	P5 J. Guerrero 13.1.3	M1 M. Arteaga Tupia 4.1.4			
5:30 pm	P5 S. Dey II 13.1.2				
6:00 pm					

Centro Brasileiro de Pesquisas Físicas (CBPF): Rua Dr. Xavier Sigaud, 150 - Urca

- ▶ Room A: Auditório Ministro João Alberto Lins de Barros
- ▶ Room B: Auditório Third Floor
- ▶ Room C: Auditório Second Floor
- ▶ Room D: Auditório Sixth Floor
- ▶ Room E: Auditório Fifth Floor

GROUP 31 – CHAIR of PLENARY SESSIONS JUNE 19 - 25

	Sunday 19	Monday 20	Tuesday 21	Wednesday 22	Thursday 23	Friday 24	Saturday 25
8:00 am							
8:30 am							
9:00 am		Registration Casa Rui Barbosa		At CBPF		Casa Rui Barbosa	Museu do Amanhã
9:30 am				Chair: J. Van der Jeugt		Chair: C. Bai	
10:00 am		Chair: R. Kerner					
10:30 am				Chair: S. Paycha			
11:00 am		Coffee Break		Coffee Break		Coffee Break	
11:30 am							
12:00 am		Chair: K. B. Wolf				Chair: P. Kialenowski	
12:30 am							
1:00 pm		Lunch				Lunch	
1:30 pm				Free afternoon			
2:00 pm							
2:30 pm		Chair: G. Pogosyan				Chair: M. Eulalia	
3:00 pm							
3:30 pm							Large Audience Conference 3.5.1 J. A. Helayël Neto
4:00 pm							
4:30 pm	Registration Welcome Party at CBPF	Coffee Break				Coffee Break	
5:00 pm		Chair: M. Angelova				Chair: A. Vourdas	
5:30 pm						Closing session	
6:00 pm							
6:30 pm				Weyl&Wigner Ceremony Museu do Amanhã			
7:00 pm							
7:30 pm				bus	Cocktail & Music CBPF		
8:00 pm							
8:30 pm				Dinner Fogo de Chão			
9:00 pm							

► **Casa Rui Barbosa:** Rua São Clemente, 134 - Botafogo

► **Museu do Amanhã:** Praça Mauá, 1 - Centro

► **Centro Brasileiro de Pesquisas Físicas (CBPF):** Rua Dr. Xavier Sigaud, 150 - Urca

**Room A** ► Auditório Ministro J. A. Lins de Barros **Room B** ► Auditório 3rd Floor

**Room C** ► Audit. 2nd Floor **Room D** ► Audit. 6th Floor **Room E** ► Audit. 5th Floor

**GROUP 31 – CHAIR of PARALLEL SESSIONS TUESDAY 21 JUNE**

	M4 Room B	M5 Room A	M6 Room A	P1&P3 Room C	P6&P7 Room D
9:00 am	M4 Chair: M. Campiglia	M5 Chair: J. F. Gomes		P1 Chair: N. Gromov	
9:30 am					
10:00 am					
10:30 am	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break
11:00 am	M4 Chair: F. Sugino	M5 Chair: Luc Vinet		P3 Chair: E. Drigo Filho	P6&P7 Chair: M. de Montigny
11:30 am					
12:00 am					
12:30 am	Lunch	Lunch	Lunch	Lunch	Lunch
1:00 pm					
1:30 pm					
2:00 pm	M4 Chair: J. Bengeloun		M6 Chair: M. Novaes	P3 Chair: L. Duarte Pastorino	P6&P7 Chair: S. Khodae
2:30 pm					
3:00 pm					
3:30 pm	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break
4:00 pm			M6 Chair: M. Szajewska		P6&P7 Chair: A. Horzela
4:30 pm					
5:00 pm					
5:30 pm					
6:00 pm					

Centro Brasileiro de Pesquisas Físicas (CBPF): Rua Dr. Xavier Sigaud, 150 - Urca

- ▶ Room A: Auditório Ministro João Alberto Lins de Barros
- ▶ Room B: Auditório Third Floor
- ▶ Room C: Auditório Second Floor
- ▶ Room D: Auditório Sixth Floor

**GROUP 31 – CHAIR of PARALLEL SESSIONS WEDNESDAY 22 JUNE**

	<b>M3 Room C</b>	<b>M5 Room D</b>	<b>M6 Room A</b>	<b>P4&amp;P5 Room E</b>	<b>P6&amp;P7 Room B</b>
9:00 am					
9:30 am					
10:00 am					
10:30 am					
11:00 am	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break
11:30 am					
12:00 am	M3 Chair: S. B. Sontz	M5 Chair: J. Links	M6 Chair: Z. Mouayn	P4&P5 Chair: R.P. Mondaini	P6&P7 Chair:
12:30 am					
1:00 pm	Free afternoon	Free afternoon	Free afternoon	Free afternoon	Free afternoon
1:30 pm					
2:00 pm					
2:30 pm					
3:00 pm					
3:30 pm					
4:00 pm					
4:30 pm					
5:00 pm					
5:30 pm					
6:00 pm					

Centro Brasileiro de Pesquisas Físicas (CBPF): Rua Dr. Xavier Sigaud, 150 - Urca

- ▶ Room A: Auditório Ministro João Alberto Lins de Barros
- ▶ Room B: Auditório Third Floor
- ▶ Room C: Auditório Second Floor
- ▶ Room D: Auditório Sixth Floor
- ▶ Room E: Auditório Fifth Floor



## GROUP 31 – CHAIR of PARALLEL SESSIONS THURSDAY 23 JUNE

	P4&P5 Room E	M3&M1 Room C	M2 Room B	M5 Room D	M6 Room A
9:00 am		M3 Chair: M. Torres			M6 Chair: H. de Guise
9:30 am			M2 Chair: J. Helayël		
10:00 am	P4 Chair: J. Guerrero				
10:30 am	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break
11:00 am	P4 Chair: S. Chávez-Cerda	M3 Chair: A. Borowiec	M2 Chair: B. Schroer		M6 Chair: N. Atakishiyev
11:30 am					
12:00 am					
12:30 am	Lunch	Lunch	Lunch	Lunch	Lunch
1:00 pm					
1:30 pm					
2:00 pm	P5 Chair: T. Koide	M1 Chair: Satheeshkumar	M2 Chair: T. Micklitz	M5 Chair: D. J. Fernandez Cabrera	M6 Chair: S. Dey
2:30 pm					
3:00 pm					
3:30 pm	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break
4:00 pm	P5 Chair: O. Castaños	M1 Chair: D. Galtsov	M2 Chair: J. Helayël	M5 Chair: A. Roa Aguirre	M6 Chair: K. Górska
4:30 pm					
5:00 pm					
5:30 pm					
6:00 pm					

Centro Brasileiro de Pesquisas Físicas (CBPF): Rua Dr. Xavier Sigaud, 150 - Urca

- ▶ Room A: Auditório Ministro João Alberto Lins de Barros
- ▶ Room B: Auditório Third Floor
- ▶ Room C: Auditório Second Floor
- ▶ Room D: Auditório Sixth Floor
- ▶ Room E: Auditório Fifth Floor

### **Awardee Talks**

- *B. Kostant*: Wigner awardee talk, Laudatio by **Michèle Vergne**
- *V. Pestun*: Weyl awardee talk, Algebraic structures on the moduli spaces in gauge theories

### **Plenary Talks at Casa Rui Barbosa**

- *G. Amelino-Camelia*: Hopf-algebra symmetries and cosmological neutrinos
- *L. Freidel*: Local subsystems in gauge theory and gravity
- *R. Heluani*: Vertex operator algebras and special holonomy manifolds
- *A. Niemi*: Symmetry, geometry and the problem of life - how to describe proteins, their shape and dynamics
- *S. Paycha*: Renormalisation of multivariate meromorphic germs; a geometric approach
- *C. Tsallis*: Statistical Mechanics for Complex Systems: Foundations and Applications
- *P. Vieira*: Integrability in Gauge and String Theories. The Spectrum and Beyond
- *V. Vitelli*: Topological Mechanical Metamaterials
- *J. Zanelli*: Local supersymmetry without supergravity

### **Special plenary talk at CBPF**

- *A. Bohm*: The Dynamical Evolution in Quantum Physics and its Semi-group

### **Memoriam Sessions at Casa Rui Barbosa**

- *M. Angelova*: Laurence Boyle - In Memoriam
- *G.A. Goldin*: Syed Twareque Ali - In Memoriam

### **Popularization of Science Talk at Museu do Amanhã, in Portuguese**

- *J. A. Helayël-Neto*: Nature and Symmetry – Natureza e Simetria

## Session M1: General Relativity, Cosmology and Differential Geometry — Oral Talks

- *Z. Aghaebrahimi*: The effect of torsion in the two-dimension arbitrary metric in cosmology
- *J. César Fabris*: Quantum cosmology in K-Essence theories
- *D. Galtsov*: Einstein-Yang-Mills theory with Horndeski coupling
- *B. Giacchini*: Gravitational seesaw and light bending in higher-derivative gravity
- *Satheeshkumar V. H.*: Heat Kernels and Black Hole Entropy
- *M. Arteaga Tupia*: An alternative set of Lorentz transformations

### Session M1: Posters

- *Z. Aghaebrahimi*: The effect of torsion in the two-dimension arbitrary metric in cosmology
- *P. H. Meert Ferreira*: Interior solution for a translating cylinder of matter
- *I.D. Soares*: Bianchi IX dynamics in bouncing cosmologies: homoclinic chaos and the BKL conjecture
- *A. M. Velasquez Toribio*: Warm Dark Matter and Accelerated Expansion

## Session M2: QFT in Minkowski and Curved Space times, Conformal and Topological Field Quantum Theory, Algebraic Topology — Oral Talks

- *I. E. da Cunha*: From world-line to (super)conformal quantum mechanics
- *N. L. de Holanda*: Worldline (super) Conformal Mechanics
- *G. B. de Gracia*: The Hamilton-Jacobi analysis in four dimensional BF theory
- *V. Dvoeglazov*: The Feynman-Dyson Propagators for Neutral Particles (Local or Non-local?)
- *S. Faci*: On the electromagnetic radiation of accelerating charges
- *N. Khusnutdinov*: The zeta-function approach for Casimir effect with application to stack of conductive planes.
- *L. Martinovic*: Two-dimensional massless light-front fields and conformal field theory
- *P. D. Prester*: Fermion in backgrounds with different spin
- *B. Schroer*: Hilbert space positivity and causal localization
- *B. Schroer*: Is the mysterious QFT associated to Wigner's infinite spin representation a candidate for dark matter?

### Session M2: Posters

- *E. M. C. de Abreu*: Gauge-invariant extensions of the Proca model in a noncommutative space-time
- *Y. M. Plumm Gomes*: Lab-based limits on the Carroll-Field-Jackiw Lorentz-violating electrodynamics

### **Session M3: Algebraic Methods, Deformed and Generalized algebras, Hopf algebras, Quantum Groups, W- algebras, Hecke algebras — Oral Talks**

- *A. Borowiec*: Hopf algebroids from Drinfeld twist
- *A. Borowiec*: All quantum deformations of the complex  $D = 4$  orthogonal Lie algebra and their Euclidean, Lorentz, Kleinian and quaternionic counterparts
- *A. Kornev*: Associative representations of octonion algebras and Poisson algebras
- *R. Kullock*: A Classical Analog of f-Oscillators
- *S. B. Sontz*: Toeplitz quantization of a quantum group
- *M. A. C. Torres*: Gauss-Manin Connection in Disguise and applications in Topological String Theory

#### ***Session M3: Posters***

- *J. Weberszpil*: Axiomatic Local Metric Derivatives With Mittag-Leffler Eigenfunctions for Low-Level Fractionality

### **Session M4: Quantum Gravity, Strings, Loop Quantum Gravity, Quantum Cosmology – Oral Talks**

- *J. Ben Geloun*: Functional Renormalization Group approach for Tensor Field Theories
- *M. Campiglia*: Large diffeomorphisms and soft theorems
- *R. da Rocha*: The shear viscosity-to-entropy ratio of generalised black strings in fluid/gravity correspondence
- *M. Maira da Silva*: Spacetime-noncommutativity regime of Loop Quantum Gravity
- *D. Galtsov*: UV divergence in gravitational radiation spectrum from massless particles: new reason for quantization of gravity
- *P. Malkiewicz*: Non-adiabatic bounce in quantum cosmology
- *P. K. Osei*: Quantum isometry groups and Born reciprocity in 3d gravity
- *N. Pinto Neto*: Bouncing models from quantum cosmology: comparison with observations
- *F. Sugino*: Higher-genus amplitudes and resurgence in SUSY double-well matrix model for 2D IIA superstrings
- *M. Valenzuela*: Fractional higher spin gravity

#### ***Session M4: Posters***

- *C. Rodrigues Almeida*: Quantum Cosmology of Scalar-tensor Theories and Self-adjointness
- *S. J. Panibra Churata*: CFT correlation functions from free scalar fields in  $AdS_{n+1}$
- *M. Maira da Silva*: Spacetime-noncommutativity regime of Loop Quantum Gravity
- *A. Grace Itunuoluwa*: Finding a dictionary between Tensor Models and GEM crystallization manifolds
- *F. B. Martinez*: Primordial tensor modes of the early Universe
- *D. Vidal*: Gravity from quantum space-time

## Session M5: Integrable, Super-integrable and Quasi-integrable Systems, Non-linear Systems, Superalgebras, Supersymmetry — Oral Talks

- *A. Roa Aguirre*: Integrable Dynamical Defects
- *N. Aizawa*: Generalized supersymmetry and Levy-Leblond equation
- *N. Atakishiyev*: On  $\text{spl}(5,5)$  supersymmetric eigenvectors of the 5D discrete Fourier transform
- *D. J. Fernández Cabrera*: Polynomial Heisenberg algebras and multiphoton coherent states
- *J. Cao*: Bethe states of quantum integrable models solved via the off-diagonal Bethe Ansatz
- *G. F. Gomes*: Construction of mKdV Hierarchy and its Backlund Transformation
- *J. Links*: Completeness of the Bethe Ansatz solution in  $\text{sl}(2)$  Richardson-Gaudin models
- *M. de Montigny*: Symmetries and soliton solutions of the Galilean complex Sine-Gordon equation
- *G. Pogosyan*: Bertrand systems on one-sheeted hyperboloid
- *A. Pupasov-Maksimov*: Eigen-phase preserving matrix Darboux transformations
- *A. L. Retore*: Gauge-Bäcklund Transformations for the KdV and mKdV hierarchies
- *N. Spano*: Fusing Defect for  $N=2$  Supersymmetric sinh-Gordon model
- *L. Vinet*: A superintegrable model on the 3-sphere with reflections And the rank 2 bannai-ito algebra
- *W. Yang*: Exact solutions of quantum spin chains with general integrable boundary condition

### Session M5: Posters

- *M. I. Estrada Delgado*: P IV solutions from systems with harmonic oscillator gapped spectrum
- *R. de C. dos Anjos*: Generalization of the conserved charges for the Toda models

## Session M6: Lie algebras and groups, Clifford algebras, representation theory, special functions — Oral Talks

- *C. Bai*: Some bialgebra theories on 3-Lie algebras
- *S. A. A. Berceanu*: Remarks on Berezin quantization on the Siegel-Jacobi ball
- *K. P. Sousa de Brito*: Bilinear covariants in arbitrary dimensions and spinor fields classification on 7-manifolds
- *H. de Guise*: Immanants of unitary matrices and their submatrices
- *M. A. del Olmo*: Group theoretical aspects of the Laguerre polynomials
- *K. Górska*: Complex Hermite polynomials in two variables - mathematical approach
- *A. Horzela*: Complex Hermite polynomials in two variables-physical approach
- *R. Léandre*: Malliavin calculus of bismut type for an operator of order four on a lie group
- *P. J. Moylan*: De Sitter Groups and the Canonical Commutation Relations
- *M. Novaes*: Expansion of polynomial Lie group integrals in terms of certain maps on surfaces and factorizations of permutations
- *F. Pan*: A new procedure for construction of the physical basis of  $\text{SU}(3)$  supset  $\text{SO}(3)$
- *R. Kerner*: Ternary algebras with  $Z_6$  grading
- *S. Khodae*: Realizations of  $\text{sl}(2, \mathbb{R})$  and invariants in Canformal Quantum Mechanics
- *E. Ley-Koo*: Review of the development and application of spheroconal theory of angular momentum
- *R. Oste*: The Dirac-Dunkl equation related to the symmetric group
- *K. Chandra Pati*: Real forms of Affine Kac-Moody Symmetric Spaces
- *M. Szajewska*: Decomposition Matrices for data on triangular lattices
- *J. Van der Jeugt*: The “odd” Gelfand-Zetlin basis for representations of general linear Lie superalgebras

- *J. Vaz Jr.*: The Clifford Algebra of Physical Space and the Dirac Theory
- *A. Yakhno*: Lie Algebra Contractions and Separation of Variables on Two-Dimensional Hyperboloid: Interbasis Expansions

### **Session P1: Atomic and Molecular Physics, Quantum Chemistry — Oral Talks**

- *J. N. S. Filho*: Current Algebra for the Generalized Two-Sites Bose-Hubbard Model
- *E. Ley-Koo*:  $O(2)$  symmetry breaking by dihedral confinement of atoms and consequent modifications of the periodic table

#### ***Session P1: Posters***

- *A. Pupasov-Maksimov*: Exact Feynman path integral for multi-well rational deformations of the Harmonic oscillator
- *R. M. Ricotta*: Using the variational method in the solution of the Schroedinger equation with position-dependent mass

### **Session P3: Nuclear and Particle Physics, Astroparticles — Oral Talks**

- *L. Melo Abreu*: Analysis of production of exotic bottomonium-like states via Heavy-Meson Effective Theory
- *R. Belvedere*: Magnetic Field of Pulsars with Realistic Neutron Star Configurations
- *V. Dvoeglazov*: Generalized Equations and Their Solutions in the  $(j,0)+(0,j)$  Representation of the Lorentz Group
- *L. Duarte*: Majorana neutrinos in an effective field theory approach
- *K. Falahi*: R Matrix Prediction of Tetraquark Spectrum
- *N. Gromov*: The history of the particles in the early Universe from contraction of the Standard Model
- *P. Kielanowski*: Rephasing invariant monomials of the Cabibbo-Kobayashi-Maskawa matrix

#### ***Session P3: Posters***

- *A. Hefren de Vasconcelos Júnior*: Re-assessing classical Electrodynamics for elementary charged bosonic carriers
- *R. de C. dos Anjos*: Luminosity of ultrahigh energy cosmic rays as a probe black strings
- *J. T. Guaitolini*: Searching for Lorentz violation in QED processes
- *C. Marques*: New Proposal to measure Coherent Neutrino Nucleus Scattering with Resonant Gamma Spectrometry

### **Session P4: Biology, Complex Systems, Statistical Mechanics — Oral Talks**

- *M. Angelova*: Investigating the effect of cognitive stress on the cardiorespiratory synchronization
- *E. M. F. Curado*: A new entropy based on a group-theoretical structure
- *K. Gorska*: The stretched exponential behavior and fractional derivative
- *R.P. Mondaini*: Pattern Recognition of Amino Acids by a Poisson Statistical Approach
- *G. Sicuro*: Groups, Information Theory and Einstein's Likelihood Principle
- *A. Vourdas*: Choquet integrals of the  $Q$ -function in statistical mechanics

### ***Session P4: Posters***

- *D. Bagchi*: Sensitivity to initial conditions of d-dimensional long-range-interacting Fermi-Pasta-Ulam-like model: Universal scaling
- *P. Rapcan*: Nonlinear inhomogeneous Fokker-Planck equations: entropy and free energy time evolution
- *G. Sicuro*: Lie symmetries for fractional partial differential equations

### **Session P5: Classical and Quantum Optics, Quantum Information — Oral Talks**

- *O. Castaños*: Generation of crystallized-type states of light within the generalized Tavis-Cummings model
- *S. Chavez-Cerda*: Disclosing non-stationary wave solutions in (2+1)D of complex parabolic differential equations: Optical Paraxial and Schroedinger wave equations
- *S. Dey*: Photon added coherent states for q-deformed noncommutative systems
- *S. Dey*: Construction of quantum optical models in noncommutative space
- *J. Guerrero*: Symmetry approach to non-Hermitian waveguide arrays
- *L. Vinet*: Quantum Entanglement In Photonic Lattices
- *A. Vourdas*: Weak mutually unbiased bases, finite geometries and zeros of analytic functions
- *K. B. Wolf*: Unitary rotation and gyration of pixellated images on rectangular screens

### ***Session P5: Posters***

- *E. Diaz-Bautista*: A short description of nonlinear coherent states in graphene
- *M. C. Salto Alegre*: Relativistic deformation of Helmholtz wavefields

**Session P6 & P7: Classical and Quantum Theories, Quantum Measurement, Classical, Semi-classical and Quantum Chaotic Systems — Oral Talks**

- *P. W. Bryant*: Uncontrolled, continuous monitoring links semigroup time evolution to exponential decay
- *E. Drigo Filho*: Coherent state in Dirac-Weyl Hamiltonian for a Circular Magnetic Field
- *J.-P. Gazeau*: A  $2 \times 2$  baby quantum formalism
- *Gerald A. Goldin*: Indistinguishable particles and interpretation of the wave function
- *Gerald A. Goldin*: Conformal symmetry and nonlinear Maxwell fields
- *J. Guerrero*: Group-theoretical approach to the quantization of a particle on  $S^3$
- *S. Joffily*: A model for the quantum vacuum fluctuation
- *T. Koide*: Unified description of classical, quantum and dissipative dynamics in stochastic variational principle
- *Z. Mouayn*: Discrete coherent states for higher Landau levels
- *M. Novaes*: Semiclassical approach to quantum chaotic transport

***Session P6: Posters***

- *R. Fresneda*: A Hamiltonian approach to Thermodynamics
- *D. G. N. Maciel*: Covariant integral quantization of the motion on the circle
- *C. Marques*: Supersymmetry Breaking at Finite Temperature in a Susy Harmonic Oscillator with interaction
- *L. Rodrigues*: Position dependent mass quantum Hamiltonians



## POSTERS OF M SESSIONS

### *Session M1*

- *Z. Aghaebrahimi*: The effect of torsion in the two-dimension arbitrary metric in cosmology
- *P. H. Meert Ferreira*: Interior solution for a translating cylinder of matter
- *I.D. Soares*: Bianchi IX dynamics in bouncing cosmologies: homoclinic chaos and the BKL conjecture
- *A. M. Velasquez Toribio*: Warm Dark Matter and Accelerated Expansion

### *Session M2*

- *E. M. C. de Abreu*: Gauge-invariant extensions of the Proca model in a noncommutative space-time
- *Y. M. Plumm Gomes*: Lab-based limits on the Carroll-Field-Jackiw Lorentz-violating electrodynamics
- *O. Bezerra Holanda Neto*: Induction of higher-derivative Chern-Simons extension in  $QED_3$

### *Session M3*

- *J. Weberszpil*: Axiomatic Local Metric Derivatives With Mittag-Leffler Eigenfunctions for Low-Level Fractionality

### *Session M4*

- *C. Rodrigues Almeida*: Quantum Cosmology of Scalar-tensor Theories and Self-adjointness
- *S. J. Panibra Churata*: CFT correlation functions from free scalar fields in  $AdS_{n+1}$
- *M. Maira da Silva*: Spacetime-noncommutativity regime of Loop Quantum Gravity
- *A. Grace Itunuoluwa*: Finding a dictionary between Tensor Models and GEM crystallization manifolds
- *F. B. Martinez*: Primordial tensor modes of the early Universe
- *D. Vidal*: Gravity from quantum space-time

### *Session M5*

- *M. I. Estrada Delgado*: P IV solutions from systems with harmonic oscillator gapped spectrum
- *R. de C. dos Anjos*: Generalization of the conserved charges for the Toda models

**POSTERS OF P SESSIONS*****Session P1***

- *A. Pupasov-Maksimov*: Exact Feynman path integral for multi-well rational deformations of the Harmonic oscillator
- *R. M. Ricotta*: Using the variational method in the solution of the Schroedinger equation with position-dependent mass

***Session P3***

- *A. Hefren de Vasconcelos Júnior*: Re-assessing classical Electrodynamics for elementary charged bosonic carriers
- *R. de C. dos Anjos*: Luminosity of ultrahigh energy cosmic rays as a probe black strings
- *J. T. Guaitolini*: Searching Lorentz violation in QED processes
- *C. Marques*: New Proposal to measure Coherent Neutrino Nucleus Scattering with Resonant Gamma Spectrometry
- *U. B. Rodriguez*: Multi-particle evaporation process in the Langevin dynamics of hot nuclei fission process

***Session P4***

- *D. Bagchi*: Sensitivity to initial conditions of d-dimensional long-range-interacting Fermi-Pasta-Ulam-like model: Universal scaling
- *P. Rapcan*: Nonlinear inhomogeneous Fokker-Planck equations: entropy and free energy time evolution
- *G. Sicuro*: Lie symmetries for fractional partial differential equations

***Session P5***

- *E. Diaz-Bautista*: A short description of nonlinear coherent states in graphene
- *M. C. Salto Alegre*: Relativistic deformation of Helmholtz wavefields

***Session P6***

- *R. Fresneda*: A Hamiltonian approach to Thermodynamics
- *D. G. N. Maciel*: Covariant integral quantization of the motion on the circle
- *C. Marques*: Supersymmetry Breaking at Finite Temperature in a Susy Harmonic Oscillator with interaction
- *L. Rodrigues*: Position dependent mass quantum Hamiltonians