CIMPA SCHOOL RECIFE - Sessões temáticas

Sexta-feira 23/01

Mathematical Analysis

Local: Auditório do Departamento de Estatística (segundo andar do Bloca A do CCEN).
Períodos:

- **Manhã** - 9h00 às 12h15 (intervalo: 10h30 às 10h45)
- **Tarde** - 14h15 às 17h30 (intervalo: 15h45 às 16h00)

Horários das palestras

09h00 – 09h45:
On the well-posedness of a generalized doubly parabolic Keller-Segel system with fractional diffusion
Anne Caroline Bronzi - UNICAMP / Brazil

09h45 – 10h30:
Theoretical Insights into Second-Grade Fluids
Marko Antonio Rojas Medar - Universidad de Tarapacá / Chile

10h30 – 10h45: Break

10h45 – 11h30:
Quasilinear elliptic problems with exponential growth via the Nehari manifold method: Existence of nonnegative and nodal solutions
Sandra Imaculada Moreira Neto - UEMA / Brazil

11h30 – 12h15 /
Existence and Multiplicity of solutions for a class of Dirac equations
Alânnio Barbosa Nobrega - UFCG / Brazil

12h15 - 14h14: Lunch

14h15 – 15h00:
Global multiplicity of positive solutions for a sublinear elliptic equation in RN
Jefferson Abrantes dos Santos - UFCG / Brazil

15h00 – 15h45:
Singular solutions to k-Hessian equations with fast-growing nonlinearities
Evelina Shamarova - UFPB / Brazil

15h45 – 16h00: Break

16h00 – 16h45:
Positive ground states for integrodifferential Schrödinger-Poisson systems

Diego Ferraz - UFRN / Brazil

16h45 – 17h30:
Perturbations that transform the critical Brezis-Nirenberg problem into a supercritical one.
Pedro Ubilla - USACH / Chile

Álgebra

Local: Sala 314 do Departamento de Estatística (segundo andar do Bloca A do CCEN)
Período:

- **Manhã** - 9h00 às 12h15 (intervalo: 10h30 às 10h45)

Horários das palestras

9h00 - 9h45:
Gorenstein ideals, Newton duality and Macaulay inverse system
Dayane Santos de Lira - UFERSA / Brazil

9h45 - 10h30:
Lefschetz Properties and Stanley Reisner Algebras
João Paulo Costalonga - UFES / Brazil

10h30 - 10h45: Break

10h45 - 11h30:
An invitation to study Lefschetz properties
Rodrigo Gondim - UFRPE / Brazil

Complex Systems in Physics and Statistics

Local: Auditório do Departamento de Física (primeiro andar do Departamento de Física)
Períodos:

- **Manhã** - 9h00 às 12h15 (intervalo: 10h30 às 10h45)
- **Tarde** - 14h15 às 17h30 (intervalo: 15h45 às 16h00)

Horários das palestras

9h00 – 9h30:
Mathematical and Computational Foundations: Topological Data Analysis: A Computer Scientist POV

Wilson de Oliveira - UFRPE / Brazil

9:30 – 10h00:
Mathematical and Computational Foundations: Weighted Permutation Entropy
Borko Stosic - UFRPE / Brazil

10h00 – 10h30:
Mathematical and Computational Foundations: Generalized Solving Differential Equations via Neural Networks
Tiago A. E. Ferreira - UFRPE / Brazil

10h30 - 10h45: Break

10h45 – 11h15:
Modeling and Pattern Recognition in Natural Systems - From Structure to Pattern: Modeling and Quantifying Complexity in Sargassum Morphology and Distribution
Paulo Duarte Neto - UFRPE / Brazil

11h15 – 11h45:
Modeling and Pattern Recognition in Natural Systems: Use of statistical tools for developing and exploiting ocean color satellite data for marine environmental purposes
Vincent Vantrepotte - CNRS / IRD – LOG / Univ. Littoral Côte d'Opale / Univ. Lille / France

11h45 – 12h15:
Modeling and Pattern Recognition in Natural Systems: Stochastic Dynamics in Complex Systems: From Quantum Chaos to Optical Turbulence
Iván R. R. Gonzalez - Universidad Mayor / Chile

12h15 - 14h15: Lunch

14h15 – 14h45:
Collective Behavior, Pattern Emergence and Complex Interactions: Complexity of climate dynamics
Tatijana Stosic - UFRPE / Brazil

14h45 – 15h15:
Collective Behavior, Pattern Emergence and Complex Interactions: An Introductory Toolkit for Analyzing Animal Groups
Francisco C. B. Leal - UFRPE / Brazil

15h15 – 15h45:
Collective Behavior, Pattern Emergence and Complex Interactions: Mixed-phase space of an active particle in experimental Lemon Billiards
Tiago Araújo Lima - UFRPE / Brazil

15h45 - 16h00: Break

16h00 – 16h30:
Population and Collective Dynamics in Natural Systems: Movement bias in asymmetric

landscapes and its impact on population distribution and critical habitat size
Pablo de Castro - UNESP / Brazil

16h30 – 17h00:
Population and Collective Dynamics in Natural Systems: Persistence of small populations facing seasonal resource variability
Viviane Moraes de Oliveira - UFRPE / Brazil

17h00 – 17h30:
Population and Collective Dynamics in Natural Systems: Evolutionary Rescue
Paulo Roberto de Araújo Campos - UFPE / Brazil

Combinatorics, Graph Theory & Network Science

Local: Sala A do Departamento de Física (primeiro andar do Departamento de Física)
Períodos:

- **Manhã** - 9h00 às 12h15 (intervalo: 10h30 às 10h45)
- **Tarde** - 14h15 às 17h30 (intervalo: 15h45 às 16h00)

Horários das palestras

9h00 - 10h30:
The Mathematics of Gossip: Modeling Social Networks with Graphs
Luiz Paulo Freire Moreira - UFPE / Brazil

10h30 - 10h45: Break

10h45 - 12h15:
Combinatorics of the Laplacian Matrix and Its Applications
Gabriel Coutinho - UFMG / Brazil

12h15 - 14h15: Lunch

14h15 - 15h45:
Computational Social Science and Social Networks
Petter Törnberg (University of Amsterdam, Netherlands)

15h45 - 16h00: Break

Sexta-feira 30/01

Dynamical Systems

Local: Auditório do Departamento de Estatística (segundo andar do Bloca A do CCEN)
Períodos:

- **Manhã** - 9h00 às 12h15 (intervalo: 10h30 às 10h45)
- **Tarde** - 14h15 às 17h30 (intervalo: 15h45 às 16h00)

Horários das palestras

9h00 - 9h45:
Dissipative Forces and Their Role in Celestial Mechanics
Clodoaldo Ragazzo - Universidade de São Paulo / Brazil

9h45 - 10h30:
Stacked Central Configurations
Antonio Carlos Fernandes - Universidade Federal de Itajubá / Brazil

10h30 - 10h45: Break

11h00 - 11h45:
Deformations of Hamiltonians and limit cycles
Ronaldo Garcia - Universidade Federal de Goiás / Brazil

12h15 - 14h15: Lunch

14h15 - 15h00:
Moments, Equilibrium Equations and Geometric Constraints
Eduardo Leandro - Universidade Federal de Pernambuco / Brazil

15h00 - 15h45:
Billiards and Celestial Mechanics
Lei Zhao - Dalian University of Technology / China

15h45 - 16h00: Break

Differential Geometry

Local: Sala 315 do Departamento de Estatística (segundo andar do Bloca A do CCEN)
Períodos:

- **Manhã** - 9h00 às 12h15 (intervalo: 10h30 às 10h45)
- **Tarde** - 14h15 às 17h30 (intervalo: 15h45 às 16h00)

Horários das palestras

9h05 - 9h45:
Uniqueness of tangent planes at infinite and applications
Eddygledson Souza Gama - UFPE / Brazil

9h45 - 10h25:

Spectral rigidity of manifolds with Ricci bounded below and maximal bottom spectrum
Elaine Sampaio - UVA / Brazil

10h30 - 10h45: Break

10h45 - 11h25:
On Rigidity of Sub-Static Systems
Allan George - UFPB / Brazil

11h25 - 12h05:
Simons-Calabi type equation for Riemannian hypersurfaces in a semi-Riemannian product spaces
Joicy Priscila de Araújo Cruz - UFPE / Brazil

12h15 - 14h15: Lunch

14h20 - 15h00:
On some applications of a Simons type formula for spacelike submanifolds in Robertson-Walker spacetime
Maria Rosilene B. dos Santos - UFAM / Brazil

15h00 - 15h40:
Area-charge inequalities and rigidity of time-symmetric initial data sets
Tiarlos Cruz - UFAL / Brazil

Stochastic Modeling

Local: Sala 314 **do** Departamento de Estatística (segundo andar do Bloca A do CCEN)
Período:

- **Tarde** - 14h15 às 17h30 (intervalo: 15h45 às 16h00)

Horários das palestras

14h15 - 15h00:
A Covariate-Driven Branching Process Model with Sibling Dependence
Nancy Lopes Garcia - UNICAMP / Brazil

15h00 - 15h45:
Models of Colonization, Collapse, and Dispersal
Valdivino Vargas Júnior - UFG / Brazil

15h45 - 16h00: Break

16h00 - 16h45

Constrained-degree percolation on the hypercubic lattice: uniqueness and some of its consequences
Diogo Carlos dos Santos - UFAL/ Brazil

16h45 - 17h05:
Modelo biológico com Operadores de Substituição
Ludmila de Pinho Cavalcanti - PPGE/UFPE / Brazil

17h05 - 17h25:
Stochastic Models for Information Diffusion in Random Networks
Jhon Franklin Puerres Tipas - PPGE/UFPE / Brazil

Neurosciences

Local: **sala a confirmar** (primeiro andar do Departamento de Física)
Períodos:

- **Manhã** - 9h00 às 12h15 (intervalo: 10h30 às 10h45)
- **Tarde** - 14h15 às 17h30 (intervalo: 15h45 às 16h00)

Horários das palestras

9h00 - 9h45:
Competitive Interactions Between External Input and Recurrent Inhibition Shape V1 Responses to Visual Flow Perturbations
Claudio Mirasso - Institute for Cross-Disciplinary Physics and Complex Systems - Universitat de les Illes Balears (IFISC, UIB-CSIC)

9h45 - 10h30:
Collective neuronal phenomena and the critical brain hypothesis
Mauro Copelli - Departamento de Física - UFPE / Brazil

10h30 - 10h45: Break

10h45 - 11h15:
Assessing criticality in neuronal populations with maximum entropy models
Pedro Carelli - Departamento de Física - UFPE / Brazil

11h15 - 11h45:
Deviation of Parabolic Avalanches dynamics in Mouse Frontal Cortex during Anhedonia
Thais Feliciano - Laboratory of Systems Neuroscience Section on Critical Brain Dynamics - National Institutes of Health (NIH)

11h45 - 12h15: Open discussion

12h15 - 14h15: Lunch

14h15 - 14h45:
The End of Uniformity: Heterogeneity, Criticality, and the Brain's Hierarchy of Timescales
Leonardo Gollo - Universitat de les Illes Balears Palma de Mallorca / Spain

14h45 - 15h15:
Insight into human photoreceptor function: Modeling optoretinographic responses to diverse stimuli
Denise Valente - Física - UPE / Brazil

15h15 - 15h45:
How Humans Restructure Predictive Models: Context-Tree Dynamics in Sequential Learning
Ítalo Pinto - Neuromat USP-SP / Brazil

15h45 - 16h00: Break

16h00 - 16h30:
Cocaine and the Brain’s Reward System: A Decoding Approach
Leandro Aguiar - UFPE / Brazil

16h30 - 17h00:
Exploring a symbolic methodology to characterize brain signals
Fernanda S. Matias - Instituto de Física - UFAL / Brazil

17h00 - 17h30: Open discussion