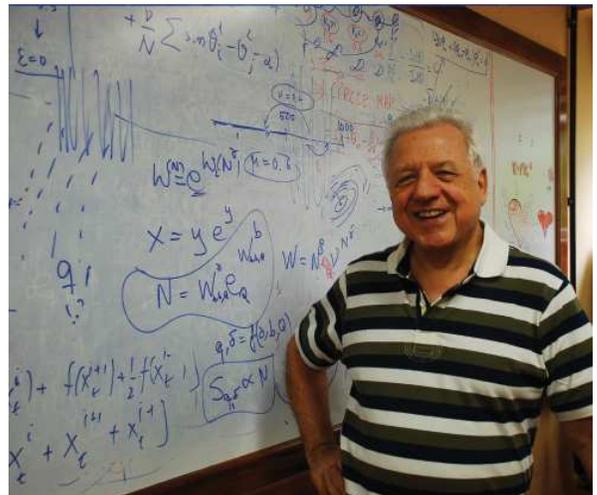


Complex Systems Foundations and Applications

Scientific Program and Photos



Also: A celebration of the **70th** birthday of Constantino Tsallis

CBPF - Rio de Janeiro - Brazil

From October 29 to November 1 – 2013

The digital version of this book can be downloaded at:

<http://www.cbpf.br/~compsyst/index.php>

Cover photo: C. Tsallis in his CBPF office, 2013, Rio de Janeiro, Brazil. Photo: J. Ricardo.

Foreword

Dear Colleagues,

We are very pleased to meet you here in CBPF, Rio de Janeiro, for the *Complex Systems – Foundations and Applications* conference. This will be an international event covering many topics in the area of complex systems, like nonlinear phenomena, econophysics, foundations and applications of non-extensive statistical mechanics, biological complexity, far-from-equilibrium phenomena, nonequilibrium in social and natural sciences, and interdisciplinary applications, among others. In this event, we will also celebrate the 70th birthday of Constantino Tsallis.

We wish you all a great conference.

André M. C. Souza (UFS)
Evaldo M. F. Curado (CBPF)
Fernando D. Nobre (CBPF)
Roberto F. S. Andrade (UFBA)

ORGANIZING COMMITTEE

Scientific Program

	DAY I TUESDAY 29/10/2013	DAY II WEDNESDAY 30/10/2013	DAY III THURSDAY 31/10/2013	DAY IV FRIDAY 01/11/2013
08h00 – 09h00	Registration			
09h00 – 09h30	Opening	ORAL COMMUNICATIONS		
09h30 – 10h30	ORAL COMMUNICATIONS			
10h30 – 11h00	Coffee Break			
11h00 – 12h30	ORAL COMMUNICATIONS			
12h30 – 14h30	LUNCH			
14h30 – 16h00	ORAL COMMUNICATIONS			
16h00 – 16h30	Coffee Break	Coffee Break and		Coffee Break
16h30 – 17h00	ORAL COM.	POSTER SESSIONS[‡]		ORAL COM.
17h00 – 18h00	ORAL COMMUNICATIONS		C. TSALLIS	ORAL COM.
18h00 – 18h30	Cocktail	ORAL COM.	TALK	Closure
20h00			Dinner	
<p>All talks: 25 minutes (presentation) + 5 minutes (questions).</p> <p>[‡]Posters should be fixed before the morning section (~ 8:30 a.m.) and removed at the end of each day.</p>				

	DAY I TUESDAY 29/10/2013	DAY II WEDNESDAY 30/10/2013	DAY III THURSDAY 31/10/2013	DAY IV FRIDAY 01/11/2013
08h00 – 09h00	Registration			
09h00 – 09h30	Opening	S. Canuto	H. J. Jensen	R. Dickman
09h30 – 10h00	H. Herrmann	A. Deppman	S. G. Coutinho	R. Maynard
10h00 – 10h30	B. Cabral	A. R. Plastino	S. Umarov	S. R. Salinas
10h30 – 11h00	Coffee Break			
11h00 – 11h30	U. Tirnakli	A. Pluchino	P. Bourgine	S. Thurner
11h30 – 12h00	H. Suyari	S. D. Queirós	N. Kalogeropoulos	R. Hanel
12h00 – 12h30	A. S. Martinez	L. S. Lucena	J. S. Dehesa	A. Morais
12h30 – 14h30	LUNCH			
14h30 – 15h00	J. S. Andrade	A. Coniglio	R. Rossignoli	A. Plastino
15h00 – 15h30	L. R. da Silva	J. Naudts	R. S. Mendes	G. Ruiz
15h30 – 16h00	M. B. Ribeiro	G. P. Pavlos	R. Riera	O. A. Rosso
16h00 – 16h30	Coffee Break	Coffee Break and		Coffee Break
16h30 – 17h00	A. Rapisarda	POSTER SESSIONS[‡]		M. Barbosa
17h00 – 17h30	A. R. Mesas	A. Robledo	C. TSALLIS SPECIAL TALK Dinner	S. C. Ferreira
17h30 – 18h00	E. E. Vogel	G. C. Yalcin		F. L. Ribeiro
18h00 – 18h30	Cocktail	L. Karakatsanis		Closure
20h00				

All talks: 25 minutes (presentation) + 5 minutes (questions).

[‡]Posters should be fixed before the morning section (~ 8:30 a.m.) and removed at the end of each day.

Day I – Tuesday – 29/10/2013

08:00h Registration

09:00h Opening: Fernando L. Freire Júnior & Fernando D. Nobre

|| **Oral Communications Morning I**

|| **Chair:** Fernando D. Nobre

09:30h Hans Herrmann – ETH Zürich/Switzerland & UFC/Ceará/Brazil
Fluids in curved space

10:00h Benedito J. C. Cabral – ULisboa/Lisboa/Portugal
Hydrogen bond networks and electronic properties of complex systems

10:30h Coffee Break

|| **Oral Communications Morning II**

|| **Chair:** Roberto F. S. Andrade

11:00h Ugur Tirnakli – Ege University/İzmir/Turkey
Central limit behaviour of dynamical systems: Emergence of q -Gaussians and scaling laws

11:30h Hiroki Suyari – Chiba University/Japan
Combinatorial basis for Tsallis entropy and its applications

12:00h Alexandre Souto Martinez – USP/São Paulo/Brazil
Ergodic transition in partially self-avoiding stochastic walks

12:30h LUNCH

|| **Oral Communications Afternoon I**

|| **Chair:** Sérgio G. Coutinho

14:30h José Soares de Andrade Jr. – UFC/Ceará/Brazil
Optimal synchronizability of bearings

15:00h Luciano R. da Silva – UFRN/Rio Grande do Norte/Brazil
The general preferential attachment growth model and nonextensive statistical mechanics

15:30h Marcelo B. Ribeiro – UFRJ/Rio de Janeiro/Brazil
Testing the Goodwin growth-cycle macroeconomic dynamics in Brazil

16:00h Coffee Break

|| **Oral Communications Afternoon II**

|| **Chair:** Celia B. Anteneodo

16:30h Andrea Rapisarda – UNICT/Catania/Italy
The beneficial role of random strategies in social and financial complex systems

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Day I – Tuesday – 29/10/2013

- 17:00h** Antonio Rodríguez Mesas – UPM/Madrid/Spain
A scale-invariant probabilistic model based on Leibniz-like pyramids
- 17:30h** Eugenio E. Vogel – UFRO/Temuco/Chile
Stock market variations by means of information theory
- 18:00h** **Cocktail**

Day II – Wednesday – 30/10/2013**Oral Communications Morning I****Chair:** Stefan Thurner

- 09:00h** Sylvio Canuto – USP/São Paulo/Brazil
Dielectric constant at the critical point
- 09:30h** Airton Deppman – USP/São Paulo/Brazil
Non-extensive self-consistency in hadronic medium
- 10:00h** Angel Ricardo Plastino – UNNOBA/Buenos Aires/Argentina
Aspects of the NRT nonlinear Schroedinger equation
- 10:30h** **Coffee Break**

Oral Communications Morning II**Chair:** Andrea Rapisarda

- 11:00h** Alessandro Pluchino – UNICT/Catania/Italy
Noise, synchrony and correlations at the edge of chaos
- 11:30h** Sílvio M. Duarte Queirós – CBPF/Rio de Janeiro/Brazil
On generalisations of the log-Normal distribution by means of a new product definition in the Kapteyn process
- 12:00h** Liacir dos Santos Lucena – UFRN/Rio Grande do Norte/Brazil
Wavelet coherency in complex systems
- 12:30h** **LUNCH**

Oral Communications Afternoon I**Chair:** Henrik J. Jensen

- 14:30h** Antonio Coniglio – Univ. of Naples “Federico II”/Italy
Cell theory for the glass transition
- 15:00h** Jan Naudts – University of Antwerp/Belgium
Statistical mechanics from the point of view of information geometry
- 15:30h** Georgios P. Pavlos – DUTH/Thrace/Greece
Universality of Tsallis non-extensive statistics and time series analysis: Theory and applications
- 16:00h** **Coffee Break and POSTER SESSION**

Oral Communications Afternoon II**Chair:** Allbens P. F. Atman

- 17:00h** Alberto Robledo – UNAM/Mexico City/Mexico
Incidence of Tsallis statistics in rank distributions

Day II – Wednesday – 30/10/2013

17:30h G. Cigdem Yalcin – Istanbul University/Turkey
Environmental aspects of superstatistics: Temperature

18:00h Leonidas P. Karakatsanis – DUTH/Thrace/Greece
Earth's climate complexity

Day III – Thursday – 31/10/2013

Oral Communications Morning I

Chair: Jeferson J. Arenzon

- 09:00h** Henrik Jeldtoft Jensen – Imperial College London/UK
Restricted random walk model as a new testing ground for the applicability of q -statistics
- 09:30h** Sérgio Galvão Coutinho – UFPE/Pernambuco/Brazil
Interplay between forest fire distribution and forest age structure
- 10:00h** Sabir Umarov – UNH/Connecticut/United States
Beyond the triangle – Brownian motion, Itô stochastic calculus, and Fokker-Planck equation: fractional generalizations
- 10:30h** **Coffee Break**

Oral Communications Morning II

Chair: Angel R. Plastino

- 11:00h** Paul Bourginé – École Polytechnique/Paris/France
Phenomenological and theoretical reconstruction in the framework of information geometry science is the process of reconstructing theory from data
- 11:30h** Nikos Kalogeropoulos – WCMC-Q/Doha/Qatar
Tsallis entropy composition: a geometric view
- 12:00h** Jesús Sánchez-Dehesa – UGR/Granada/Spain
Tsallis' entropy for central potentials: Improved bounds and uncertainty relations
- 12:30h** **LUNCH**

Oral Communications Afternoon

Chair: Marcia C. Barbosa

- 14:30h** Raúl Rossignoli – UNLP/La Plata/Argentina
Generalized entropic measures of quantum correlations
- 15:00h** Renio dos Santos Mendes – UEM/Paraná/Brazil
Data analysis of elections
- 15:30h** Rosane Riera – PUC-Rio/Rio de Janeiro/Brazil
An Information-based tool for inferring the nature of deterministic sources in real data
- 16:00h** **Coffee Break and POSTER SESSION**

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Day III – Thursday – 31/10/2013**Special Talk****Chair:** Evaldo M. F. Curado**17:00h** Constantino Tsallis – CBPF/RJ/Brazil & SFI/New Mexico/USA
Theoretical physics: Crossroads of truth and beauty**20:00h** **Dinner**

Day IV – Friday – 01/11/2013**Oral Communications Morning I****Chair:** José S. Andrade Jr.

09:00h Ronald Dickman – UFMG/Minas Gerais/Brazil
The Cancho i Ferrer - Solé model does not explain Zipf's Law

09:30h Roger Maynard – UJF/Grenoble/France
Imaging in complex media: Recent progresses

10:00h Silvio R. A. Salinas – USP/São Paulo/Brazil
To be announced

10:30h **Coffee Break**

Oral Communications Morning II**Chair:** Benedito Cabral

11:00h Stefan Thurner – MUV/Vienna/Austria
Entropy for complex and non-ergodic systems, a derivation from first principles

11:30h Rudolf Hanel – MUV/Vienna/Austria
From multiplicity to entropy

12:00h Apiano Morais – URCA/Ceará/Brazil
Self-organised fractal corrosion in heterogeneous solids

12:30h **LUNCH**

Oral Communications Afternoon I**Chair:** Ronald Dickman

14:30h Angel Plastino – UNLP/La Plata/Argentina
MaxEnt and von Bertalanffy's growth processes

15:00h Guiomar Ruiz Lopez – UPM/Madrid/Spain
Towards a large deviation theory for statistical-mechanical complex systems

15:30h Osvaldo A. Rosso – UFAL/Alagoas/Brazil & UBA/B. Aires/Argentina
Distinguishing noise from chaos: an Information Theory approach

16:00h **Coffee Break**

Oral Communications Afternoon II**Chair:** Ugur Tirnakli

16:30h Marcia C. Barbosa – UFRGS/Rio Grande do Sul/Brazil
Enhancement flow in nanoconfined water

continue on next page

Day IV – Friday – 01/11/2013

- 17:00h** Sílvio C. Ferreira – UFV/Minas Gerais/Brazil
Mean-field theories and quasi-stationary simulations of epidemics models on complex networks
- 17:30h** Fabiano Lemes Ribeiro – UFLA/Minas Gerais/Brazil
A non-phenomenological model to explain population growth behaviors
- 18:00h** [Closure](#)

POSTER SESSION**Day II – Wednesday – 30/10/2013****Chair:** Luciana A. Rios

- 01** Alyson Paulo Santos – UFRN/Rio Grande do Norte/Brazil
Non extensive H-Theorem in General Relativity
- 02** Andres M. Kowalski – UNLP/La Plata/Argentina
Generalized complexity and classical-quantum transition
- 03** Angel Akio Tateishi – UEM/Paraná/Brazil
The transformation groupoid structure of the q -Gaussian family
- 04** Bruno G. da Costa – IFSertão-PE/Pernambuco/Brazil
Classical and quantum harmonic oscillator with position-dependent mass
- 05** Cesar Ivan Nunes Sampaio Filho – UFC/Ceará/Brazil
Scaling functions for systems with finite range of interaction
- 06** Daniel Brito de Freitas – UFRN/Rio Grande do Norte/Brazil
A nonextensive approach to the stellar rotational evolution for F- and G-type stars
- 07** Diego Mateos – UNC/Córdoba/Argentina
A Comparison between methods for analyzing physiological time series
- 08** Edson P. da Silva – UFRRJ/Rio de Janeiro/Brazil
A Kramers-Moyal expansion approach to time series of the atmospheric temperature – A contribution to the discussion of the global weather change
- 09** Ernesto P. Borges – UFBA/Bahia/Brazil
Generalized space and linear momentum operators in quantum mechanics
- 10** Ervin K. Lenzi – UEM/Paraná/Brazil
Fractional diffusion equation, surface effects and anomalous diffusion
- 11** Felipe Aguiar Severino dos Santos – UFOP/Minas Gerais/Brazil
Scaling exponents of rough surfaces generated by damage spreading in the Ising model
- 12** Felipe Olivares – UNLP/La Plata/Argentina
Permutation quantifiers and the fine structure on the chaotic attractors.
- 13** Felipe Mondaini – CEFET-RJ/Rio de Janeiro/Brazil
Free energy evaluation in polymer translocation via Jarzynski equality
- 14** Fernando J. Antônio – UEM/Paraná/Brazil
Growing jackpot and persistence in lottery winners
- 15** Flávio S. Michels – UEM/Paraná/Brazil
First passage time for a diffusive process under a geometric constraint

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POSTER SESSION**Day II – Wednesday – 30/10/2013**

- 16** Fortunato Silva de Menezes – UFLA/Minas Gerais/Brazil
Alternative measures for biospeckle image analysis
- 17** Francisco Rocha – UFPE/Pernambuco/Brazil
Control of centrifugal fingering via a variable interfacial tension approach
- 18** Gabriel Dias Carvalho – UFPE/Pernambuco/Brazil
Interfacial elastic fingering in Hele-Shaw cells: A weakly nonlinear study
- 19** Gabriela A. Casas – CBPF/Rio de Janeiro/Brazil
Entropy Production in systems described by a master equation
- 20** João V. Fontana – UFPE/Pernambuco/Brazil
Radial viscous fingering in yield stress fluids: Onset of pattern formation
- 21** José A. C. Nogales & Karen Burgoa-Rosso – UFLA/Minas Gerais/Brazil
Nonextensive thermostatic properties of compact stars
- 22** José Weberszpil – UFRRJ/Rio de Janeiro/Brazil
Anomalous g -factors for charged leptons in a fractional coarse-grained approach
- 23** Leandro Prade Nadaletti – COPPE/UFRJ/Rio de Janeiro/Brazil
Synchronization as a mechanism for protein folding
- 24** Mauricio S. Ribeiro – CBPF/Rio de Janeiro/Brazil
Overdamped motion of interacting particles in general confining potentials: Time-dependent and stationary-state analyses
- 25** Reinaldo R. Rosa – INPE/São Paulo/Brazil
Statistical complexity and pattern formation in cosmology

POSTER SESSION**Day III – Thursday – 31/10/2013**

Chair: Ernesto P. Borges

- 01** Allbens P. F. Atman – CEFET-MG/Minas Gerais/Brazil
Non-Gaussian behavior in jamming / unjamming transition in dense granular materials
- 02** Elton José da Silva Júnior – UFMG/Minas Gerais/Brazil
Reactive strategies: The establishment of cooperation
- 03** Leonardo J. L. Cirto – CBPF/Rio de Janeiro/Brazil
Controlling the range of interactions in the classical inertial Heisenberg model
- 04** Luciana A. Rios – CBPF/Rio de Janeiro/Brazil
Ion-acoustic double-layers in magnetized plasmas with nonthermal electrons
- 05** Luiz G. A. Alves – UEM/Paraná/Brazil
Scaling laws in the dynamics of crime growth rate
- 06** Maíke A. F. dos Santos – UEM/Paraná/Brazil
Nonlinear diffusion equation, solutions and Tsallis framework
- 07** Marcelo L. Martins – UFV/Minas Gerais/Brazil
Boolean network model for cancer pathways: predicting carcinogenesis and target therapy outcomes
- 08** Marco A. Rego Monteiro – CBPF/Rio de Janeiro/Brazil
Classical field theory for a nonlinear Schroedinger equation
- 10** Maury Duarte Correia – CBPF/PETROBRAS/Rio de Janeiro/Brazil
 q -Statistics modelling NMR decay of unconsolidated porous media
- 11** Max Jáuregui – CBPF/Rio de Janeiro/Brazil
A representation of the Dirac delta based on the q -exponential function
- 12** Norma Canosa – UNLP/La Plata/Argentina
Generalized information deficit and quantum discord in spin chains
- 13** Pablo de Castro – UFPE/Pernambuco/Brazil
Role of viscous friction in the reverse rotation of a disk
- 14** Rebeca C. Falcão – UFPE/Pernambuco/Brazil
Statistical model of impact fragmentation in a disk
- 15** Renato R. Guimarães – UEM/Paraná/Brazil
Scaling law and anti-persistent motion of annihilating defects in a lyotropic liquid crystal
- 16** Roberto da Silva – UFRGS/Rio Grande do Sul/Brazil
Time-dependent Monte Carlo simulations for the refinement of critical points for extensive and non-extensive spin models

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POSTER SESSION**Day III – Thursday – 31/10/2013**

- 17** Roseli S. Wedemann – UERJ/Rio de Janeiro/Brazil
Some properties of memory retrieval in an associative memory neural network for conscious and unconscious mental behavior
- 18** Sabrina Camargo – EMap/FGV/Rio de Janeiro/Brazil
Bridging stylized facts in finance and data non-stationarities
- 19** Sergio Curilef – UCN/Antofagasta/Chile
Analytical solutions for a nonlinear diffusion equation: convection and reaction terms
- 20** Steeve Zozor – GIPSA-Lab/Grenoble/France & UNLP/La Plata/Argentina
On generalized entropic uncertainty relations for the qnIt
- 21** Suani T. R. Pinho – UFBA/Bahia/Brazil
Deformed Pythagorean triples and Fibonacci sequences
- 22** Thierry C. Petit Lobão – UFBA/Bahia/Brazil
A family of Leibniz triangles as models for correlated systems
- 23** Victor Pedrosa – UFPE/Pernambuco/Brazil
Electronic transport through disordered wires using Stochastic Differential Equations
- 24** Wellington P. A. Spinola – UFOP/Minas Gerais/Brazil
Cellular Automata simulation of people moving in confined space in the presence of obstacles

Participants

Name	Institution	Country
Airton Deppman	USP/São Paulo	Brazil
Alberto Robledo	UNAM/Mexico City	Mexico
Alessandro Pluchino	UNICT/Italy	Italy
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Sergio Martins de Souza	UFLA/Minas Gerais	Brazil
Sílvio C. Ferreira	UFV/Minas Gerais	Brazil
Sílvio M. Duarte Queirós	CBPF/Rio de Janeiro	Brazil

continue on next page

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Solange G. F. Martins	UFPA/Minas Gerais	Brazil
Steeve Zozor	GIPSA-lab/CNRS	France
Stefan Thurner	MUV/Vienna	Austria
Suani T. R. Pinho	UFBA/Bahia	Brazil
Suzana Moss de Oliveira	UFF/Rio de Janeiro	Brazil
Sylvio Canuto	USP/São Paulo	Brazil
Tania P. Simões Yamaki	UNICAMP/São Paulo	Brazil
Thiago de Melo Santiago	UFC/Ceará	Brazil
Thierry C. Petit Lobão	UFBA/Bahia	Brazil
Tobias Micklitz	CBPF/Rio de Janeiro	Brazil
Ugur Tirnakli	Ege University/İsmir	Turkey
Vicente A. A. Espinoza	PUC-Rio/Rio de Janeiro	Brazil
Victor P. Braga Cavalcanti	UFPE/Pernambuco	Brazil
Wellington P. A. Spinola	UFOP/Minas Gerais	Brazil
Wemerson P. O. Marinho	JGP Gestão Global de Recursos	Brazil
Yuri Jacob Lumer	IBMEC/Rio de Janeiro	Brazil

Constantino Tsallis

Constantino Tsallis was born in Athens-Greece, grew up in Argentina, and acquired the Brazilian citizenship since 1981. He works in the area of statistical mechanics, and presently heads the National Institute of Science and Technology for Complex Systems of Brazil. He obtained his title of Docteur d'État ès Sciences Physiques from the University of Paris-France in 1974. He has worked in a variety of theoretical subjects in the areas of critical phenomena, chaos and nonlinear dynamics, economics, cognitive psychology, immunology, population evolution, among others. Since over two decades, he is focusing on the entropy and the foundations of statistical mechanics, as well as on some of their scientific and technological applications. Indeed, he proposed in 1987 and formally published in 1988 a generalization of the Boltzmann-Gibbs entropy and its associated statistical mechanics. This generalization is presently being actively studied around the world: a Bibliography containing more than 4,000 directly related articles, by more than 6,000 scientists, is available at <http://tsallis.cat.cbpf.br/biblio.htm>. Prof. Tsallis' contributions have received over 13,000 ISI citations (more than 3,000 of them for his 1988 paper), which currently makes him one among the most cited scientists of all times in Latin America. He has received many international and national distinctions (Guggenheim Foundation Award, Mexico Prize for Science and Technology, Rio de Janeiro Prize of Science and Technology, among many others), and has been given in four occasions the title of Doctor Honoris Causa by Universities from Argentina (Cordoba), Brazil (Maringa and Natal) and Greece (the Thessaloniki Aristotelian University). He is member of the Academy of Sciences of Brazil, as well as of the Academy of Economical, Political and Social Sciences of Brazil. He received in 2012 the highest distinction from the Academy of Athens. He is main editor of *Physica A* – Elsevier (Amsterdam), and has supervised close to 40 Doctor and Master Thesis. He has given regular undergraduate and graduate courses in Physics in Brazil, Argentina, USA, France and Germany, and has given close to 1,000 invited lectures around the world. Prof. Tsallis is an external Professor of the Santa Fe Institute, New Mexico, and proceeds his activities as Emeritus Professor at the Centro Brasileiro de Pesquisas Físicas, where he works since 1977.



1946: Three-years-old Constantino and his father, Emmanuel, in Athens, Greece.



1951 circa: Constantino with his brother Demetrio and his sister Thalia, and their mother Cleopatra.



1959: A handsome guy, isn't he?



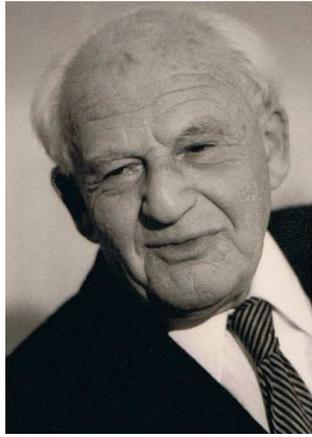
1959 circa: Parents and children.



1960: Constantino and colleagues during his two-year period as student of Chemical Engineering at Universidad Nacional de Cuyo, San Juan, Argentina. In 1963 he switched to Physics at the Instituto Balseiro in Bariloche. I bet the top photo inspired the french director François Truffaut in his 1962 film *Jules et Jim*, don't you? (Reprinted without permission).



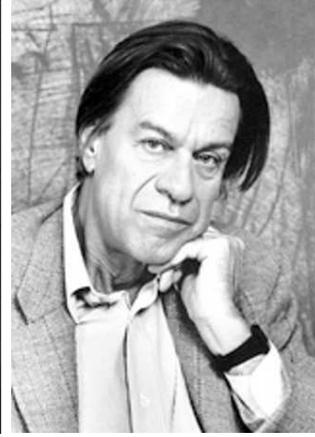
1963: Constantino alone and with his mother, Cleopatra, in Bariloche, Argentina.



Guido Beck



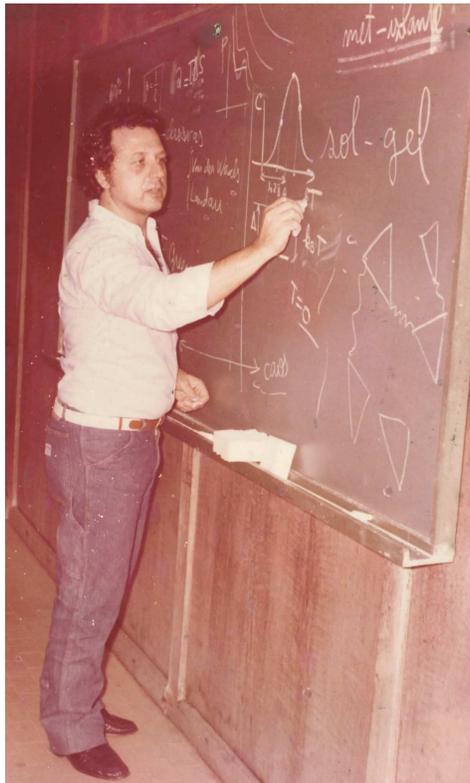
André Guinier



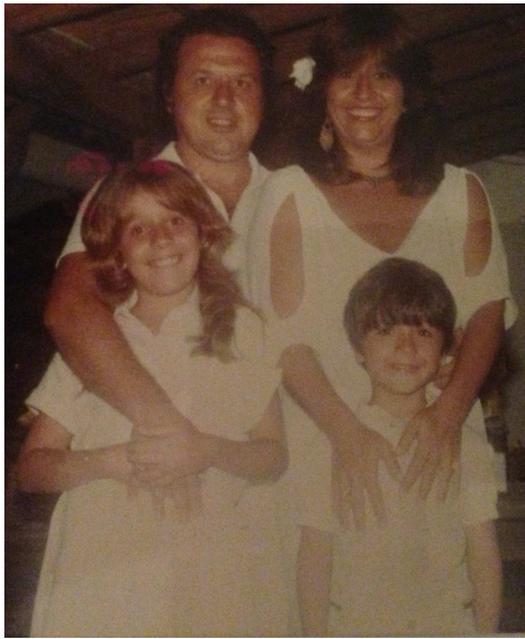
Pierre-Gilles de Gennes



Top: Guido Beck, his M. Sci. advisor, André Guinier, the president of the Jury of his Docteur d'État ès Sciences Physiques, and Pierre-Gilles de Gennes, professor during his Doctor studies who, reportedly, strongly influenced him. **Bottom:** Constantino Tsallis at home in 2005, Rio de Janeiro, Brazil.



1983: Constantino Tsallis at Universidade Federal do Pará during the 35th Annual Meeting of SBPC (the *Brazilian Society for the Advancement of Science*), Belém, Brazil.



1984 circa: Constantino with Maria Cristina and their children, Alexandra and Adrian. Réveillon in Buzios, Rio de Janeiro, Brazil.



1985 circa: Constantino, his first son, Adrian, and Maria Cristina, Adrian's mother, in Mendoza, Argentina.



1995: Constantino preparing a one-handed backhand. Michigan, United States.



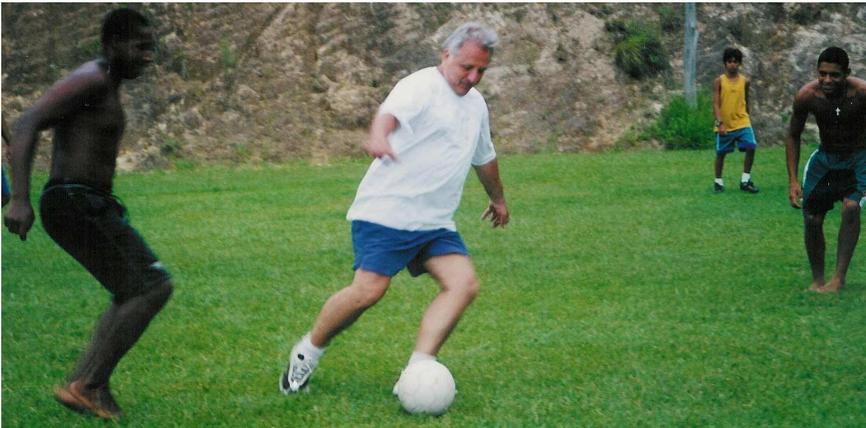
15–18 February, 1999: Constantino Tsallis and Kyozi Kawasaki at the Institute for Molecular Sciences (IMS) during the *Winter School of Statistical Mechanics: Nonextensive Generalization of Boltzmann-Gibbs Statistical Mechanics and Its Applications*, Okazaki, Japan. It was the first international meeting on nonextensive statistical mechanics, and was fully organized and sponsored by Japan.



2000: During the *IUPAP International Conference on New Trends in the Fractal Aspects of Complex Systems (FACS2000)* at the Universidade Federal de Alagoas, Maceió, Brazil. From left to right: Hans Herrmann, Liacir S. Lucena, Luciano R. da Silva, Constantino Tsallis, H. Eugene Stanley and Dietrich Stauffer.



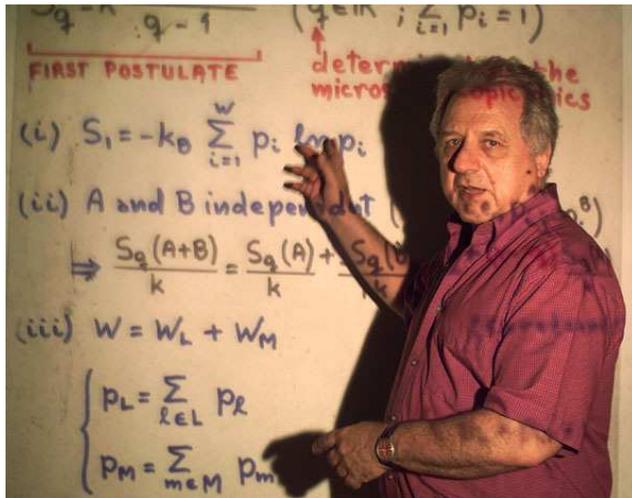
2000 and 2001: Stefano Ruffo's visions of Constantino.



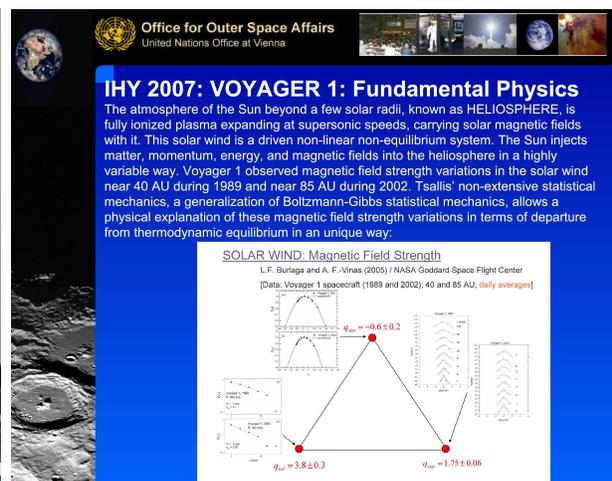
2002: Playing football (!!) in Rio de Janeiro, Brazil.



2002: Constantino in Bali, Indonesia.



2002 circa: Constantino Tsallis in action at CBPF (forget tennis and football), Rio de Janeiro, Brazil.



2003: With Andrea Rapisarda in Catania, Italy. On the board: the emergence of the idea of the q -triplet conjecture following a question of a student. This conjecture was published in 2004 and observed by NASA in 2005 in the magnetic field fluctuations in the solar wind data collected by Voyager 1 spacecraft. On the right, the poster prepared by United Nations for the celebration of the *International Heliophysical Year* in 2007. We see the q -triplet and graphs of the Burlaga and Viñas 2005 paper with their analysis of the Voyager 1 data.



2003: At the Capo Boi Hotel in Villasimius, Cagliari, Sardegna, Italy. From left to right: Andrea Rapisarda, Constantino Tsallis and Eddie G. D. Cohen.



2003: International Conference *News and Expectations in Thermostatistics* (NEXT, a.k.a. *Nonextensive*) in Villasimius, Sardegna, Italy. Sitting on the left we see Peter T. Landsberg; on his knees we see Piero Quarati.



2004: Constantino Tsallis receiving the *Mexico Prize for Science and Technology* from the President Vicente Fox, Mexico City, Mexico.



2004: Receiving the award *Comendador da Ordem Nacional do Mérito Científico* from the Minister of Science and Technology, Eduardo Campos. President Lula in the background. Brasília, Brazil.



2004: With his children, Emmanuel, Adrian and Alexandra, after receiving the award from the Minister, Brasília, Brazil.



2005: Constantino with his son, Emmanuel, in Santa Fe, New Mexico, United States.



2005: (color online) With Mickey Mouse in Orlando, Florida, United States. Mickey is on the left.



2005: Constantino Tsallis receiving the title of Doctor Honoris Causa by the Universidad Nacional de Córdoba, Argentina.



2006: Constantino with his children, Alexandra, Adrian and Emmanuel, his son in law, Marcelo, and his granddaughter, Flora. Father's Day.



2006: In his CBPF office, Rio de Janeiro, Brazil.



2006: **Top:** Conference photo of the *International Summer School and Workshop on Complex Systems and Nonextensive Statistical Mechanics* at ICTP, Trieste, Italy. Constantino Tsallis in the center; at his left we see Eddie and Marina Cohen, Angel Plastino Sr. and Jean Pierre Boon. Two rows after him we can see (quite rare!) photos of Attipat K. Rajagopal and Sumiyoshi Abe, early comers into q -statistics. **Bottom:** With friends working hard in the meeting!! From left to right: John A. Marsh (one of the members of what Constantino likes to refer to as the *New York team*), Ernesto P. Borges (Tsallis' former doctoral student), Ugur Tirnakli and ... the musician!



2006: Constantino Tsallis and Murray Gell-Mann at Santa Fe Institute, New Mexico, United States.



2007: Constantino Tsallis and Gerard 't Hooft at Cristo Redentor, Rio de Janeiro, Brazil.



2007: Constantino Tsallis receiving the Elsevier Prize from Dante Cid, publisher director for Latin America, at CBPF, Rio de Janeiro, Brazil.



2007: Receiving the title of Doctor Honoris Causa by the Universidade Estadual de Maringá, Paraná, Brazil. From left to right: the Dean Décio Sperandio, the Director of the physics department, João Mura, Constantino Tsallis, the Coordinator of the graduate physics department, Luiz Roberto Evangelista, and the Vice Dean Mário Azevedo.



2007: Constantino Tsallis receiving the title of Doctor Honoris Causa by the Universidade Federal do Rio Grande do Norte, Natal, Brazil.



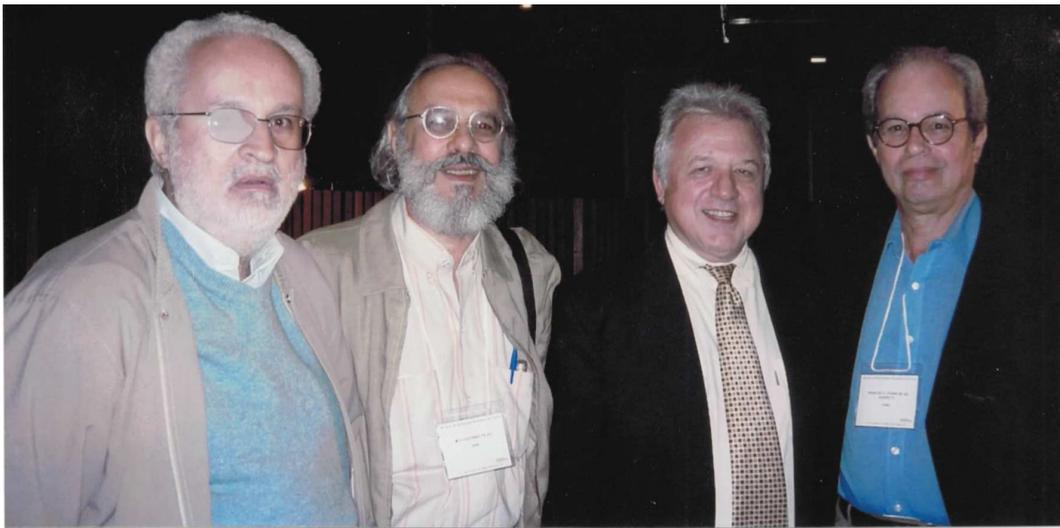
2007: International Conference on *Complexity, Metastability and Nonextensivity*, Catania, Italy. In the center we see Angel Plastino Jr., and Alberto Robledo in front of him.



2007: Clockwise: Aglaé de Magalhães, Constantino Tsallis, Fernando D. Nobre, Evaldo M. F. Curado and Ananias M. Mariz, Rio de Janeiro, Brazil. All of them were Constantino's doctor students, excepting the one who paid the bill :))



2007: Celebrating Constantino's birthday at Sítio Veredas, Rio de Janeiro, Brazil. From left to right: the secretaries Vanda (now retired) and Almério (his fidèle écuyer), Luciano R. da Silva and Fernando D. Nobre.



2008 circa: Constantino Tsallis with some of the founders of modern statistical mechanics in Brazil. From left to right: Silvio R. A. Salinas, Maurício D. Coutinho-Filho and Francisco C. Sá Barreto.



2008: Constantino with his second son, Emmanuel, and Maria Aparecida, Emmanuel's mother, "jumping" carnival in Rio de Janeiro, Brazil.



2009: In the workshop *Mathematical Aspects of Generalized Entropies and their Applications*, Kyoto, Japan. Seated in the center we see Shun-ichi Amari.



2009: Constantino Tsallis receiving the title of Doctor Honoris Causa by the Aristotelian University of Thessaloniki, Greece. The title of his talk was: *Aristotelian Metaphor, Caratheodory Thermodynamics, and Nonextensive Statistical Mechanics - An Epistemological Promenade.*



2009: Celebrating the 60 years of CBPF, Rio de Janeiro, Brazil. From left to right: Adalberto Fazzio, Moysés Nussenzveig, Walter Baltensperger, Sérgio Mascarenhas, Spero Morato, Ricardo Galvão, Amós Troper, Constantino Tsallis, Sérgio Rezende in front of Alberto Passos Guimarães, Alfredo Ozório de Almeida, Elisa Frota Pessoa, Erasmo Ferreira, Jayme Tiomno and Affonso Guidão Gomes.



2009: During the *XI Latin American Workshop on Nonlinear Phenomena (LAWNP)* in Buzios, Rio de Janeiro, Brazil. From left to right: Stefan Thurner, Ugur Tirkakli, Christian Beck and Constantino Tsallis.



2009: Constantino Tsallis receiving an award during the 5th United Nations/NASA/ESA/JAXA Workshop on Basic Space Science and IHY, in Daejeon, South Korea.



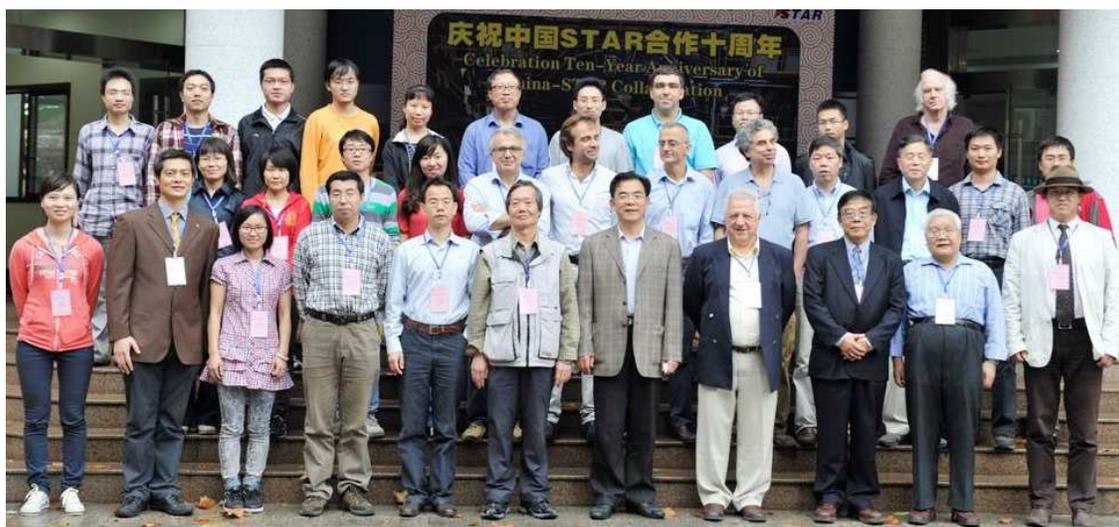
2010: Κωνσταντίνος Τσαλλής as seen in the Wikipedia.



2011: Constantino Tsallis with some of his doctoral students. From left to right: Luciano R. da Silva, Maria da Conceição de Sousa Vieira, Ananias M. Mariz, Constantino, Anna Chame and Edson Pinheiro. Workshop celebrating da Silva's birthday, Natal, Rio Grande do Norte, Brazil.



2012: Pizzeria in Rio Sul in the last day of the *nonextensive statistical mechanics* course held at CBPF, Rio de Janeiro, Brazil. Clockwise: Roseli S. Wedemann, Constantino Tsallis and the students: Maria F. Noriega Vargas, Sebastião T. O. Almeida, Nilo B. Melgar, Gabriela A. Casas, Max J. Jáuregui, Leonardo P. R. Ospedal, Maurício S. Ribeiro and Leonardo J. L. Cirto.



2012: *International Symposium on Tsallis Entropy and Its Applications*, Wuhan, China.



2012: Constantino Tsallis lecturing to teenagers at a high school in Itacoatiara, Amazonas, Brazil. Itacoatiara is 270 Kms away from Manaus, the Capital of Amazonas State. Virtually all these young students are descendants of the native inhabitants of Brazil.



2012: Constantino Tsallis, after being awarded the *Aristio* (Excellence) by the Academy of Athens, Greece. The modern Academy of Athens has its origin in the Academy founded by Plato in the Vth century B.C.



2012: With his sons, Emmanuel and Adrian, and with his grandson, Enzo, Adrian's child, Rio de Janeiro, Brazil.



2013: In the CBPF garden with the secretaries of the Theoretical Physics department. From left to right: Bete, Constantino, Cláudia and Almério. Rio de Janeiro, Brazil. Photo: J. Ricardo.



2013: Constantino Tsallis with his present doctoral students, Max Jáuregui (left) and Leonardo Cirto, at CBPF, Rio de Janeiro, Brazil. Photo: J. Ricardo.

Tarantella

Piergiulio Tempesta
20 settembre 2013

The image displays a musical score for a piece titled "Tarantella" by Piergiulio Tempesta, dated September 20, 2013. The score is written for piano and is in 12/8 time, with a tempo marking of ♩ = 164. The piece begins with a forte (*f*) dynamic in the right hand, while the left hand starts with a mezzo-forte (*mf*) dynamic. The score is divided into five systems, with measure numbers 4, 175, 177, and 182 indicating the start of each system. The first system (measures 1-3) shows a rhythmic pattern in the right hand and a more active bass line in the left hand. The second system (measures 4-6) continues this pattern with some chromatic movement. The third system (measures 7-9) features a change in dynamics, with the right hand moving to *mf* and the left hand to *f*. The fourth system (measures 10-12) shows a complex texture with multiple voices in both hands, including some chords and rests. The fifth system (measures 13-15) concludes the piece with a final chord in the right hand and a sustained bass line in the left hand, marked with a forte (*f*) dynamic.

2013: The very beginning and the very end of the Tempesta's Tarantella score. This *Tarantella en Honor de Constantino* has been composed by Piergiulio Tempesta, as his birthday gift to Constantino's 70 years.

