

13 September 2007

Curriculum Vitae

Fábio Aarão Reis

I. Personal data and contact information

Full name: **Fábio David Alves Aarão Reis**

Born 30 May 1966 in Rio de Janeiro, Brazil.

Married; one daughter, age 9 years.

Residence: Rua Prof. Miguel Couto, 389/1004, Icaraí, Niterói, RJ, 24210-340, Brazil

Work: Instituto de Física da Universidade Federal Fluminense (IF/UFF),

Avenida Litorânea s/n, Campus da Praia Vermelha, Niterói, RJ, 24210-340, Brazil

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II. Degrees

12/1987 *B.Sc., Pontifícia Universidade Católica do Rio de Janeiro
(PUC/Rio - Catholic University of Rio de Janeiro)*

12/1990 *M.Sc., PUC/Rio; Supervisor: Rosane Riera
Topics: Statistical Physics; phase transitions and critical phenomena*

03/1994 *D.Sc., PUC/Rio; Supervisor: Rosane Riera
Topics: Statistical Physics; phase transitions and critical phenomena*

III. Professional experience and appointments

August 1994 - present: Associate Professor of Physics, Universidade Federal Fluminense (UFF).

March 1995 - present: Research Fellow of CNPq (brazilian financial agency); appointment among brazilian scientists, renewable each three years, currently class 1D of research grant.

2001, 2004, 2006, 2007 (short visits): Visiting scientist, Oxford University (UK).

2004, 2006, 2007 (short visits): Visiting scientist, Université Pierre et Marie Curie (Paris VI).

2006 (short visit): Visiting scientist, Institute of Phys. Chem. of the Polish Academy of Sciences.

March 1994 - August 1994: Visiting Professor, PUC/Rio

March 1988 - March 1994: Teaching assistant, PUC/Rio

IV. Supervision

(i) *Supervision of undergraduate students*

10 students complete, 1996-present: trainees supported by brazilian agencies, with published works with 3 of them (Sergio S. Botelho, Jônatas A. R. Euzébio and Bruno S. Costa).

Currently 5 students under supervision

(ii) *Supervision of MSc. students*

4 students complete (Sergio S. Botelho, Jônatas A. R. Euzébio, Tiago J. Oliveira and Flávio A. Silveira), three of them with published work in the period. Sergio got his PhD at GeorgiaTech, Atlanta, in 2005 and currently works at Intel Corporation. The other ones are currently in doctorate under my supervision.

2 students currently (Vladimir G. Miranda and Victor F. Monteiro)

(iii) *Supervision of doctorate students*

4 students currently (Jônatas A. R. Euzébio, Thiago G. Mattos, Tiago J. Oliveira and Flávio A. Silveira)

V. Teaching

(i) *Lecturing for undergraduate courses*

Undergraduate lecture courses at PUC/RJ and UENF, from 1988 to 1994:

Basic Physics I, II and III (1st and 2nd years of Engn., Phys., Math., Chem.)

Undergraduate lecture courses at UFF, since 1994:

Basic Physics (1st and 2nd years of Physics and Engineering courses)

Thermodynamics (3rd year of Physics course)

Statistical Physics (4th year of Physics course)

Electromagnetic Theory (3rd year of Physics course)

Computational Methods in Physics (elective of Physics course)

(ii) *Lecturing for graduate courses at UFF*

Statistical Mechanics (for 6 terms, from 2000 to 2003)

Special topics - Statistical Models of Thin Film and Surface Growth

(2nd term 2006)

Electromagnetic Theory (2nd term of 2007)

VI. Invited seminars and talks

Seminars in Brazil: UFRJ (Rio de Janeiro, 1999 and 2002), PUC/Rio (2002), UNB (Brasília - 2004), ITA (São José dos Campos - 2006).

Seminars abroad: École Nationale Supérieure de Chimie de Paris (2004), Institute of Physical Chemistry of the Polish Academy of Sciences (2006).

Invited talk in Brazil: Workshop on Dynamical Fractures (UNB, 2006).

VII. Examining

Examining for UFF MSc. course entrance, 1996 and 1997, 2001 and 2002.

Examining for M.Sc. and PhD degrees at UFF in 2002, 2004 and 2005.

External examiner for M.Sc. degree at PUC/Rio in 1997 and at USP in 2006.

External examiner for PhD degrees at Universidade Federal de Minas Gerais (UFMG) in 2001 and 2007, Universidade de Campinas (UNICAMP) in 2003, Universidade Federal do Rio de Janeiro (UFRJ) in 2006.

VIII. Consulting

Referee of Physical Review Letters (since 1999), Physical Review B (s. 1999), Physical Review E (s. 2002), Physica A (s. 2001), Journal of Physics Cond. Matt. (s. 2000), Journal of Non-Crystalline Solids (s. 1999), Brazilian Journal of Physics (s. 1994), International Journal of Modern Physics C (s. 2004), Europhysics Letters (s. 2005) and Physics Letters A (s. 2007).

Reviewer (ad-hoc consultor) of brazilian financial agencies CNPq (since 2000), CAPES (since 2006) and Fapemig (since 2006).

IX. Funding

CNPq (individual grant): half salary, half research expenses - see III.

Faperj - agency of state of Rio de Janeiro (PI): support in 1999, 2001 and 2005 for equipment (computation).

CNPq (PI): support in 2004 and 2006 for equipment (computation).

Participant in proposals: Faperj (2001), CTPETRO (2001), CTENERG (2004); support for equipment (computation) in all cases.

CNPq, Faperj, CNRS (France), Polish Academy of Sciences: partial support for living expenses abroad in 2001, 2004 and 2006.

Brazilian Academy of Sciences: support for travel expenses in 2006.

Royal Society of UK: living expenses in Oxford (two months), 2006 and 2007.

For visitors (individual grants): Robin Stinchcombe (2006), support from UFF; Janusz Stafiej (2006), from CNPq.

Support for Schools and Meetings: 1997, 2003 and 2004, from CNPq and Faperj.

X. Administration - other activities

Chair of the organizing committee of I School of Physics of UFF (2004) and member of the organizing committee of the II School (2005).

Member of the organizing committee of the National Meeting of Condensed Matter Physics (2003).

Chair of the I School of Condensed Matter Physics of UFF (1997).

Member of the Computer Committee of IF/UFF (1998 - 2000).

Member of the Research Committee of the Physics Department at UFF (2002 - 2006).

Member of other committees from 1998 to 2007.

XI. Research work

(i) Research Interests (current and previous)

Non-equilibrium Statistical Mechanics applied to interface growth, thin film deposition and submonolayer growth; theoretical aspects of growth models.

Non-equilibrium dynamics and dynamical phase transitions; anomalous coarsening and glassy behavior.

Statistical models of reaction, diffusion and catalyst deactivation.

Critical phenomena in disordered media and fractals; anomalous diffusion and dynamical properties.; fractal geometry.

Disordered and diluted magnetism; spin glasses and other frustrated systems.

Statistical mechanics of polymers.

(ii) Current co-workers

Jean-Pierre Badioli - Univ. Pierre et Marie Curie, Paris, France (badioli@ccr.jussieu.fr)

Anna Chame - Universidade Federal Fluminense (achame@if.uff.br)

Kaled Dechoum - Universidade Federal Fluminense (kaled@if.uff.br)

Thereza Paiva - Universidade Federal do Rio de Janeiro (tclp@if.ufrj.br)

Janusz Stafiej - Polish Academy of Sciences, Warsaw, Poland (accjst@ichf.edu.pl)

Robin Stinchcombe - University of Oxford (r.stinchcombe1@physics.ox.ac.uk)

Local research team: 11 students (4 PhD, 2 MSc, 5 undergraduate - see IV)

(iii) Research Papers Published

1) *Exact series expansions for systems on regular fractals. F. D. A. Aarão Reis and R. Riera, Phys. Rev. A* **45**, n^o 4, p. 2628 (1992).

2) *Critical behaviour of self-avoiding walks on fractals. F. D. A. Aarão Reis and R. Riera, J. Stat. Phys.* **71**, n^o 3-4, p. 453 (1993).

- 3) *High-temperature series expansions for Ising-like systems on fractals.* F. D. A. Aarão Reis and R. Riera, *Phys. Rev.* **E 49**, n^o 4, p. 2579 (1994).
- 4) *Lacunarity calculation in the true fractal limit.* D. A. Fabio, Aarão Reis and R. Riera, *J. Phys. A: Math. Gen.* **27**, n^o 6, p. 1827 (1994). (note: Fabio's name split in two parts, there were only 2 authors)
- 5) *The ideal chain problem in infinitely ramified self-similar structures.* F. D. A. Aarão Reis and R. Riera, *Physica* **A208**, p. 322 (1994).
- 6) *Directed self-avoiding walks on Sierpinski carpets: series results.* F. D. A. Aarão Reis and R. Riera, *J. Phys. A: Math. Gen.* **28**, n^o 5, p. 1257 (1995).
- 7) *Non-universal behaviour of self-attracting walks.* F. D. A. Aarão Reis, *J. Phys. A: Math. Gen.* **28**, n^o 14, p. 3851 (1995).
- 8) *Finite-size scaling for random walks on fractals.* F. D. A. Aarão Reis, *J. Phys. A: Math. Gen.* **28**, n^o 22, p. 6277 (1995).
- 9) *Scaling for random walks on Sierpinski carpets.* F. D. A. Aarão Reis, *Phys. Lett.* **A214**, n^o 5/6, pp. 239-242 (1996).
- 10) *Scaling for random walks on Eden trees.* F. D. A. Aarão Reis, *Phys. Rev.* **E 54** (Rapid Comm.), n^o 4, pp. 3079-3081 (1996).
- 11) *Weak vs. strong universality in the two-dimensional random bond Ising ferromagnet.* F. D. A. Aarão Reis, S. L. de Queiroz and Raimundo R. dos Santos, *Phys. Rev.* **B 54** (Rapid Comm.), n^o 14, pp. 9616-9619 (1996).
- 12) *Diffusion on regular random fractals.* F. D. A. Aarão Reis, *J. Phys. A: Math. Gen.* **29**, n^o 24, pp. 7803-7810 (1996).
- 13) *Finite-size scaling on random magnetic structures.* F. D. A. Aarão Reis, *Phys. Rev.* **B 55**, n^o 17, pp. 11084-11087 (1997).
- 14) *Connective Constant of SAWs on the Sierpinski Gasket Family.* F. A. C. C. Chalub, F. D. A. Aarão Reis and R. Riera, *J. Phys. A: Math. Gen.* **30**, n^o 12, pp. 4151-4160 (1997).
- 15) *Universality and logarithmic corrections in two-dimensional random Ising ferromagnets.* F. D. A. Aarão Reis, S. L. de Queiroz and Raimundo R. dos Santos, *Phys. Rev.* **B 56**, pp. 6013-6020 (1997).
- 16) *Specific heat singularity in two-dimensional random Ising ferromagnets.* D. Stauffer, F. D. A. Aarão Reis, S. L. de Queiroz and Raimundo R. dos Santos, *Int. J. Mod. Phys. C*, **8**, n^o 6, pp. 1209-1215 (1997).
- 17) *Magnetism of thin Ising films with rough surfaces.* F. D. A. Aarão Reis, *Phys. Rev. B* **58**, n^o 1, pp. 394-399 (1998).
- 18) *Finite-size scaling on random magnetic structures.* F. D. A. Aarão Reis, *Physica A* **257**, n^o 1-4, 495-500 (1998).

- 19) *Adsorption of ideal polymers on an infinitely ramified fractal.* F. D. A. Aarão Reis, *J. Stat. Phys.* **92**, n^o 3-4, 659-674 (1998).
- 20) *Diffusion on complex cellular automata patterns.* Sergio S. Botelho and F. D. A. Aarão Reis, *Physica A* **260**, n^o 3-4, 338-348 (1998).
- 21) *Two-dimensional scaling in magnetic systems with non-integer characteristic lengths.* F. D. A. Aarão Reis, *J. Phys. A* **31**, n^o 46, 9105-9116 (1998).
- 22) *Two species model for deposition and erosion of carbon-nitrogen films.* Fábio D. A. Aarão Reis and Dante F. Franceschini, *Appl. Phys. Lett.* **71**, 209 (1999).
- 23) *Diffusion on fractals with interacting internal boundaries.* F. D. A. Aarão Reis, *J. Chem. Phys.* **111**, n^o 1, pp. 310-316 (1999).
- 24) *Universality, frustration and conformal invariance in two-dimensional random Ising magnets.* S. L. de Queiroz, Fábio D. A. Aarão Reis and Raimundo R. dos Santos, *Phys. Rev. B* **60**, 6740-6748 (1999).
- 25) *Numerical studies of dilute Ising systems on strips.* S. L. de Queiroz, Fábio D. A. Aarão Reis and Raimundo R. dos Santos, *Comp. Phys. Comm.* **121/122**, 210-213 (1999).
- 26) *Statistical models for carbon-nitrogen films growth.* F. D. A. Aarão Reis and Dante F. Franceschini, *Phys. Rev. E* **61**, n^o 4, pp. 3417-3425 (2000).
- 27) *Critical behavior of thin Ising films with non-integer thicknesses.* F. D. A. Aarão Reis, *Phys. Rev. B* **62**, n^o 10, pp. 6565-6569 (2000).
- 28) *Effects of interface width scaling and spatial correlations on Ising systems with rough boundaries.* F. D. A. Aarão Reis, *Physica A*, **291**, n^{os} 1-4, pp. 375-386 (2001).
- 29) *Critical properties of a branched polymer growth model.* Sergio S. Botelho and F. D. A. Aarão Reis, *Phys. Rev. E* **63**, n^o 1, art. no. 011108 (2001).
- 30) *Universality and corrections to scaling in the ballistic deposition model.* F. D. A. Aarão Reis, *Phys. Rev. E* **63**, n^o 5, art. no. 056116 (2001).
- 31) *Static phase and dynamic scaling in a deposition model with an inactive species.* Sergio S. Botelho and F. D. A. Aarão Reis, *Phys. Rev. E* **65**, n^o 3, art. no. 032101 (2002).
- 32) *Relaxation to steady states and dynamical exponents in deposition models.* F. D. A. Aarão Reis, *Physica A* **316**, n^o 1-4, 250-258 (2002).
- 33) *Dynamic transition in deposition with a poisoning species.* F. D. A. Aarão Reis, *Phys. Rev. E* **66**, n^o 2, art. no. 027101 (2002). (2002).
- 34) *Crossover effects in a discrete deposition model with Kardar-Parisi-Zhang scaling.* Anna Chame and F. D. A. Aarão Reis, *Phys. Rev. E* **66**, n^o 5, art. no. 051104 (2002).
- 35) *Finite-size effects on the growth models of Das Sarma and Tamborenea and of Wolf and Villain.* Bruno de S. Costa, Jônatas A. R. Euzébio and F. D. A. Aarão Reis, *Physica A* **328**, n^{os} 1-2, 193-204 (2003).

- 36) *Depinning transitions in interface growth models.* F. D. A. Aarão Reis, *Braz. J. Phys.* **33**, n^{os} 3, 501-513 (2003) - review article.
- 37) *Dynamic transition in etching with poisoning.* F. D. A. Aarão Reis, *Phys. Rev. E* **68**, n^o 4, 41602 (2003).
- 38) *Universality in two-dimensional Kardar-Parisi-Zhang growth.* F. D. A. Aarão Reis, *Phys. Rev. E* **69**, n^o 2, 21610 (2004).
- 39) *Scaling of local interface width of statistical growth models.* A. Chame and F. D. A. Aarão Reis, *Surf. Sci.* **553**, n^{os} 1-3, 145-154 (2004).
- 40) *Cluster growth in far-from-equilibrium particle models with diffusion, detachment, reattachment and deposition.* F. D. A. Aarão Reis and Robin B. Stinchcombe, *Phys. Rev. E* **70**, n^{os} 3, 036109 (2004).
- 41) *Numerical study of discrete models in the class of the nonlinear molecular beam epitaxy equation.* F. D. A. Aarão Reis, *Phys. Rev. E* **70**, n^{os} 3, 031607 (2004).
- 42) *Non-universal coarsening and universal distributions in far-from equilibrium systems.* F. D. A. Aarão Reis and Robin B. Stinchcombe, *Phys. Rev. E* **71**, n^{os} 3, 026110 (2005).
- 43) *Statistical models of diffusion and aggregation for coke formation in a catalyst pore.* F. D. A. Aarão Reis, *Physica A* **350**, n^{os} 2-4, 407-417 (2005).
- 44) *Numerical study of roughness distributions in nonlinear models of interface growth.* F. D. A. Aarão Reis, *Phys. Rev. E* **72**, n^o 3, 032601 (2005).
- 45) *Logarithmic coarsening and glassy behavior in a polymer model with mass-dependent diffusion.* F. D. A. Aarão Reis and Robin B. Stinchcombe, *Phys. Rev. E* **72**, n^o 3, 031109 (2005).
- 46) *Roughness fluctuations, roughness exponents and the universality class of ballistic deposition.* F. D. A. Aarão Reis, *Physica A* **364**, 190-196 (2006).
- 47) *Scaling in the crossover from random to correlated growth.* F. D. A. Aarão Reis, *Phys. Rev. E* **73**, 021605 (2006).
- 48) *Growth exponents in surface models with non-active sites.* Marcio Santos, Wagner Figueiredo and F. D. A. Aarão Reis, *Physica A* **371**, n^{os} 1, 92-95 (2006).
- 49) *Universal and nonuniversal features in the crossover from linear to nonlinear growth.* Tiago J. de Oliveira, Kaled Dechoum, José A. Redinz and F. D. A. Aarão Reis, *Phys. Rev. E* **74**, n^o 1, 011604 (2006).
- 50) *Scaling theory in a model of corrosion and passivation.* F. D. A. Aarão Reis, Janusz Stafiej and Jean-Pierre Badiali, *J. Phys. Chem. B* **110**, n^{os} 35, 17554-17562 (2006).
- 51) *Statistical modelling of electrochemical deposition of nanostructured hybrid films with ZnO-Eosin Y as a case example.* F. D. A. Aarão Reis, Jean-Pierre Badiali, Thierry Pauporté and Daniel Lincot, *J. Electroanal. Chem.* **598**, n^{os} 1-2, 27-35 (2006).

- 52) *Crossover of interface growth dynamics during corrosion and passivation.* F. D. A. Aarão Reis and Janusz Stafiej, *J. Phys.: Condens. Matter* **19**, n^o 6, 065125 (2007).
- 53) *Height and roughness distributions in thin films with Kardar-Parisi-Zhang scaling.* Thereza Paiva and F. D. A. Aarão Reis, *Surf. Sci.* **601**, n^{os} 2, 419-424 (2007).
- 54) *Island coarsening in one-dimensional models with partially and completely reversible aggregation.* Anna Chame and F. D. A. Aarão Reis, *Physica A* **376**, n^{os} 1-4, 108-116 (2007).
- 55) *Effects of grains' features in surface roughness scaling.* Tiago J. de Oliveira and F. D. A. Aarão Reis, *J. Appl. Phys.* **101**, 063507 (2007).
- 56) *Scaling behavior in corrosion and growth of a passive film.* F. D. A. Aarão Reis and J. Stafiej, *Phys. Rev. E* **76**, 011512 (2007).
- 57) *Surface and bulk properties of deposits grown with a bidisperse ballistic deposition model.* F. A. Silveira and F. D. A. Aarão Reis, *Phys. Rev. E* **75**, 061608 (2007).

(iv) Research Papers Submitted

- 1) *Modeling one-dimensional island growth with mass-dependent detachment rates.* Robin B. Stinchcombe and F. D. A. Aarão Reis, submitted to *Phys. Rev. B* (August 2007).
- 2) *Finite-size effects in roughness distribution scaling.* T. J. Oliveira and F. D. A. Aarão Reis, submitted to *Phys. Rev. E* (revised August 2007).

(v) Research Papers in Preparation

- 1) *Numerical study of the Kardar-Parisi-Zhang equation.* Vladimir G. Miranda and F. D. A. Aarão Reis, to be submitted to *J. Stat. Mech.: Theory and Exper.* (2007).
- 2) *Average time of maximal adsorption of long particles in finite lattices.* David V. Teixeira and F. D. A. Aarão Reis, to be submitted to *Phys. Rev. E* (2007).

(vi) Citations

Search for REIS, FDAA; REIS, FDA; FABIO, DA.

In June 2007, total 298 citations in ISI Web of Science (including those with errors in volume, page etc); h-factor (excludes errors) = 10.