Workshop 2007/2008
Physics and Astronomy

Brasília, April 6th - 2009

Instituto de Física
Universidade Federal Fluminense

Graduate Program in Physics
Master and PhD
Grade 5 CAPES
Supervisor: **Prof. Antonio Zelaquett Khoury**

1- PROPOSAL

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PROPOSAL

Our graduate programe is mainly devoted to formation of qualified young researchers and to support the research activities of the Physics Institute at UFF. It was created in the 70's, initially restricted to the field of Solid State Physics. In 1985 our PhD was started in this same field, but was later expanded to other research fields like Nuclear Physics, Field Theory and Gravitation, Plasma Physics, Atomic and Molecular Spectroscopy, Optics and Quantum Information. Since its creation, a total of **151 master thesis and 76 PhD thesis** were concluded in our program.

Our program's reputation is evidenced by the presence of qualified researchers, including members of the Brazilian Academy of Science and fellows of the Rio de Janeiro State Foundation ("*Cientistas do Nosso Estado*" – FAPERJ). Moreover, many of our researchers belong to national projects what brings a significant amount of research fundings and alowed for an important development of our experimental facilities.

Main research fields

- Field Theory and Particle Physics
- Nuclear Physics
- Optics, and Atomic and Molecular Physics
- Condensed Matter Physics

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Research Fields

Field Theory and Particle Physics

Research field: High Energy Physics I

Description: Simulation and reconstruction of ultra high energy cosmic rays observed by fluorescence detectors for the Pierre Auger Observatory.

Research field: High Energy Physics II

Description: Study of cosmic rays reactions detected by the muons telescope Physics Institute - UFF (TUPI).

Research field: Theoretical Physics

Description: Study of theoretical models for fundamental interactions.

Nuclear Physics

Research field: Nuclear Physics

Description: Study of nuclear processes and heavy ions reactions.

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Research Fields

Optics, and Atomic and Molecular Physics

Research field: Atomic and Molecular Spectroscopy

Description : Laser spectroscopy of gazes.

Research field: Nonlinear and Applied Optics.

Description : Applications of photorefractive materials; image processing; interferometry and applied optics in general.

Research field: Quantum Optics and Quantum Information

Description : Study of quantum information transmission and processing wih optical systems.

Condensed Matter Physics

Research field: Condesend Matter

Description : Study of properties of solids and new materials.

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Main projects and fundings in 2007 and 2008

Institutos do Milênio CNPq-MCT:

- Quantum Information – supervisor: Prof. Amir Caldeira - UNICAMP.
- Nanoteconlogy - supervisor: Profa. Belita Koiler - UFRJ.
- National Network for Nanotubes - supervisor: Prof. Marcos Pimenta - UFMG

PRONEX CNPq/FAPERJ:

- Nuclear Reactions - supervisor: Prof. Felipe Canto - UFRJ
- Quantum Mechanics in Information Processing and Transmission, and in High Precision Measurements - supervisor: Prof. Nelson Faria - UFRJ
- Low Dimensionality Systems - supervisor: Prof. Mucio A. Continentino - UFF.
- Thin Films - supervisor: Prof. Fernando Lazaro Freire - PUC-Rio

Pensa-Rio FAPERJ:

- New Magnetic Materials and Applictions – supervisor: Prof. Mucio A. Continentino - UFF.
- Nanostructures and Strongly Correlated Systems – supervisor: Prof. Carlos Augusto Passos - CBPF.
- New information and communication technologies through the use of Quantum Mechanics - supervisor: Prof. Paulo H. S. Ribeiro da UFRJ.

"Cientista do Nosso Estado" - FAPERJ: 5 projects

CNPq-Universal, FAPERJ APQ, CAPES-PROCAD-PROBRAL-COFECUB.

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Main Fundings: Larger Amounts

FINEP – CTINFRA 2007/2008 project: R$ 592.300,00 for several equipments.
(Prof. Roberto Bechara – Head of IF-UFF).

Petrobras-UFF project: R$ 3.000.000,00 for a 14C – AMS accelerador.
(Prof. Paulo Gomes).

Courses

Obligatory courses

- **STATISTICAL MECHANICS**
- **QUANTUM MECHANICS I**
- **QUANTUM MECHANICS II**
- **ELETROMAGNETIC THEORY I**
- **ELETROMAGNETIC THEORY II**

Courses

Optional courses

- **QUANTUM INFORMATION AND COMPUTATION I**
- **QUANTUM INFORMATION AND COMPUTATION II**
- **ATOMIC AND MOLECULAR SPECTROSCOPY**
- **NUCLEAR SPECTRA**
- **NUCLEAR STRUCTURE**
- **ATOMIC PHYSICS**
- **COMPUTATIONAL PHYSICS**
- **HEAVY IONS PHYSICS**
- **MOLECULAR PHYSICS**
- **QUANTUM HADRODYNAMICS**
- **INTRODUCTION TO STOCHASTIC SYSTEMS AND MODELS WITH ABSORBING STATES**
- **METHODS FOR THEORETICAL PHYSICS I**
- **METHODS FOR THEORETICAL PHYSICS II**
- **STOCHASTIC PROCESSES IN BOSONIC SYSTEMS**
- **NUCLEAR REACTIONS I**
- **NUCLEAR REACTIONS II**
- **SUPERCONDUCTIVITY**
- **MANY BODY THEORY**

Courses

Optional courses

- **LASER PHYSICS I**
- **LASER PHYSICS II**
- **PLASMA PHYSICS I**
- **PLASMA PHYSICS II**
- **SOLID STATE PHYSICS I**
- **SOLID STATE PHYSICS II**
- **NUCLEAR PHYSICS I**
- **NUCLEAR PHYSICS II**
- **QUANTUM OPTICS**
- **OPTICS I**
- **OPTICS II**
- **GENERAL RELATIVITY AND COSMOLOGY I**
- **GENERAL RELATIVITY AND COSMOLOGY II**
- **QUANTUM FIELD THEORY I**
- **QUANTUM FIELD THEORY II**

Courses

Optional courses (special topics)

- **Nanostructured Carbon**
- **Fundamentals of Cristalography**
- **Topics in Quantum Field Theory**
- **Thin Films Materials**
- **Density Functional Theory Applied to Solids and Nanostructures**
- **Introduction to Relativistic Heavy Ions and the Quarks and Gluons Plasma**
- **Advanced Topics avançados in Quantum Mechanics**
- **Phase Transitions and Critical Phenomena – Classical Systems**
- **Phase Transitions and Critical Phenomena – Quantum Systems**

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Planning

Experimental development:

Our program has atracted a significant amount of research fundings as can be seen from the several projects developed by our researchers. These projects has allowed for an important expansion of our experimental facilities. This represents a strong bias in our planning. We have also hired experimentalists in order to increase our experimental research.

Regional development:

Another important aspect of our planning is related to the development of the research structure (personel and facilities) in deveolping regions of the Rio de Janeiro State. Our campus in Volta Redonda has followed our experimental expansion, with creation of new laboratories which are of strategic economical interest due to the many industries in the region.

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Planning

Interdisciplinarity:

Some of our reaserch fields like Radioecology or Computational Physics are devoted to subjects of interset of other research areas like Biology, Engeneering, Medicine and others. We envisage a future development of these fields which can provide highly qualified personel to work in activities other than the academic research. This planning is a fundamental aspect of the interaction between our program and the social interests.

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Facilities

Laboratories:

A great effort has been devoted to the development of our experimental facilities with a considerable amount of funding. We list bellow the laboratories, where our experimental research and thesis are developed.

1. **Radioecology** (Profs. Roberto Meigikos e Kita Macario)
2. **Thin Films** (Prof. Dante F. Franceschini Filho)
3. **Laser Spectroscopy** (Prof. Carlos Eduardo Fellows)
4. **High Energy - Muons Telescope** (Prof. Carlos E. Navia Ojeda)
5. **Plasma and Spectroscopy** (Prof. Gildo de H. Cavalcanti)
6. **Quantum Optics** (Prof. Antonio Z. Khoury)
7. **Solid State Physics** (Profs. J. C. Fernandes e R. B. Guimarães)
8. **Applied and Nonlinear Optics** (Prof. Paulo Acioly Marques dos Santos)
9. **X Ray Difractometry** (Prof. Renato B. Guimarães)

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Facilities

Library:

The UFF Physics Institute library was created in the early 80's and its resources were expanded with fundings from MEC, CNPq, CAPES and FINEP. About 8500 books and 15 journal subscriptions are available to about 3.000 users, including graduate and under-graduate students, and professors..

Computers:

Our program has four computer rooms, one server room and three rooms available to graduate and under-graduate students, and professors.. Our Scientific Computaton Laboratory has more than sixty machines, besides servers and routers.

"Casa da Descoberta":

Our "Casa da Descoberta", is devoted to scientific diffusion wide spreading Physics experiments for college students. it is an important project for our social insertion .

2- RESEARCHERS

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RESEARCHERS

Name	(P)-Permanent (C)-Cooperation (V)-Visitor		Degree	Year	Course 2007 (G ou PG)	Course 2008 (G ou PG)	CNPq Fellowship
	2007	2008					
Alexandre G. de M. Schmidt	**P**	**P**	**D**	2002	**G**	**G**	2
Andrea Brito Latgé	**P**	**P**	**D**	1989	**-**	**PG/G**	1C
Anna Maria Nóbrega Chame	**P**	**P**	**D**	1989	**G**	**G**	-
Antonio de Padua Brito Serbeto	**P**	**P**	**D**	1988	**-**	**G**	-
Antonio Delfino Junior	**P**	**P**	**D**	1984	**G**	**G**	-
Antonio Tavares da Costa Junior	**P**	**P**	**D**	2001	**G**	**G**	2
Antonio Gomes Trigueiros	**C**	**-**	**D**	1985	**-**	**-**	1C
Antonio Zelaquett Khoury	**P**	**P**	**D**	1994	**PG/G**	**G**	1D
Armando Villares Ferrer	**P**	**-**	**D**	1999	**G**	**-**	-

(Fonte: Coleta Capes / http://lattes.cnpq.br/)

Pesquisa feita em março de 2009

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RESEARCHERS

Name	(P)-Permanent (C)-Cooperation (V)-Visitor		Degree	Year	Course 2007 (G ou PG)	Course 2008 (G ou PG)	CNPq Fellowship
	2007	2008					
Beatriz Maria Boechat Ponciano	**P**	**-**	**D**	1992	**G**	**-**	-
Carlos Eduardo Fellows	**P**	**P**	**D**	1991	**PG/G**	**PG/G**	2
Carlos Enrique Navia Ojeda	**P**	**P**	**D**	1986	**G**	**G**	2
Claudette Elísea Cordeiro	**P**	**P**	**D**	1984	**G**	**G**	-
Daniel Jonathan	**P**	**P**	**D**	1997	**PG**	**G**	-
Dante F. Franceschini Filho	**P**	**P**	**D**	1994	**PG**	**G**	-
Edgardo Brigatti	**-**	**V**	**D**	2006	**-**	**-**	7A
Ernesto Galvão	**-**	**C**	**D**	2002	**-**	**G**	-
Evandro Vidor Lins de Mello	**P**	**P**	**D**	1983	**PG**	**PG/G**	1D

(Fonte: Coleta Capes / http://lattes.cnpq.br/)

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RESEARCHERS

Name	(P)-Permanent (C)-Cooperation (V)-Visitor		Degree	Year	Course 2007 (G ou PG)	Course 2008 (G ou PG)	CNPq Fellowship
	2007	2008					
Fabio David Alves Aarao Reis	**P**	**P**	**D**	1994	**PG/G**	**-**	1D
Glauco Santos Maciel	**-**	**P**	**D**	1999	**-**	**G**	2
Gildo de Holanda Cavalcanti	**P**	**P**	**D**	1994	**PG/G**	**G**	2
Jesús Lubián Ríos	**P**	**P**	**D**	1995	**G**	**PG/G**	2
João Carlos Fernandes	**P**	**P**	**D**	1977	**PG**	**PG**	2
Jorge Simões de Sá Martins	**P**	**P**	**D**	1998	**G**	**G**	2
José Augusto Oliveira Huguenin	**P**	**P**	**D**	2006	**G**	**G**	-
Jürgen Fritz Stilck	**P**	**P**	**D**	1983	**PG/G**	**G**	1D
Kaled Dechoum	**P**	**P**	**D**	1998	**G**	**PG/G**	2

(Fonte: Coleta Capes / http://lattes.cnpq.br/)

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RESEARCHERS

Name	(P)-Permanent (C)-Cooperation (V)-Visitor		Degree	Year	Course 2007 (G ou PG)	Course 2008 (G ou PG)	CNPq Fellowship
	2007	2008					
King Hay Tsui	**P**	**P**	**D**	1975	**G**	**G**	2
Kita Chaves Damasio Macario	**P**	**P**	**D**	2003	**-**	**G**	-
Luis Esteban Oxman	**P**	**P**	**D**	1993	**PG**	**PG/G**	2
Luiz Victorio Belvedere	**P**	**P**	**D**	1986	**G**	**PG/G**	-
Manuel M. B. Malheiro de Oliveira	**P**	**P**	**D**	1991	**-**	**-**	1D
Marcelo Silva Sarandy	**P**	**P**	**D**	2001	**G**	**G**	2
Marcia Gonçalves do Amaral	**P**	**P**	**D**	1985	**-**	**-**	-
Marcio Argollo F. de Menezes	**P**	**P**	**D**	2002	**G**	**G**	2
Marco Moriconi	**P**	**P**	**D**	1996	**G**	**G**	-

(Fonte: Coleta Capes / http://lattes.cnpq.br/)

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RESEARCHERS

Name	(P)-Permanent (C)-Cooperation (V)-Visitor		Degree	Year	Course 2007 (G ou PG)	Course 2008 (G ou PG)	CNPq Fellowship
	2007	2008					
Marcos Sergio Figueira da Silva	**P**	**P**	**D**	1994	**PG/G**	**PG/G**	2
Maria Emília Xavier Guimarães	**P**	**P**	**D**	1996	**G**	**G**	1D
Maria Teresa C. dos S. Thomaz	**P**	**P**	**D**	1981	**G**	**G**	1D
Michel Vervloet	**-**	**V**	**D**	1978	**-**	**-**	-
Mucio Amado Continentino	**P**	**P**	**D**	1978	**PG/G**	**PG**	1A
Nazira Abache Tomimura	**C**	**-**	**D**	1976	**-**	**-**	-
Nivaldo Agostinho Lemos	**P**	**P**	**D**	1981	**G**	**G**	-
Paulo Acioly M. dos Santos	**P**	**P**	**D**	1989	**G**	**G**	2
Paulo Murilo Castro de Oliveira	**P**	**P**	**D**	1980	**G**	**G**	1A

(Fonte: Coleta Capes / http://lattes.cnpq.br/)

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RESEARCHERS

Name	(P)-Permanent (C)-Cooperation (V)-Visitor		Degree	Year	Course 2007 (G ou PG)	Course 2008 (G ou PG)	CNPq Fellowship
	2007	2008					
Paulo Roberto Silveira Gomes	**P**	**P**	**D**	1979	**G**	**G**	1B
Pedro Paulo de M. Venezuela	**P**	**P**	**D**	1997	**G**	**G**	2
Renato Bastos Guimarães	**P**	**P**	**D**	1988	**G**	**G**	1D
Roberto Bechara Muniz	**P**	**P**	**D**	1983	**-**	**-**	1C
Roberto Meigikos dos Anjos	**P**	**P**	**D**	1992	**G**	**PG/G**	1D
Rubens Luis P. G. do Amaral	**P**	**P**	**D**	1991	**G**	**G**	-
Suzana Maria Moss de Oliveira	**P**	**P**	**D**	1989	**-**	**-**	1D
Thadeu Josino Pereira Penna	**P**	**P**	**D**	1989	**G**	**PG/G**	-

(Fonte: Coleta Capes / http://lattes.cnpq.br/)

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SUMMARY OF THE 48 PERMANENT MEMBERS

CNPq Fellowship	
1A	2
1B	1
1C	2
1D	10
2	17
TOTAL	32

3- STUDENTS AND THESIS

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Thesis concluded in 2007 and 2008

In the table bellow we present the number of master and PhD thesis concluded in 2007 and 2008, as well as the total values. In 2007 the program had 49 researchers and 81 students, while in 2008 there were 48 researchers and 72 students.

	Master	Percentage thes./res.	Percentage thes./stud.	PhD	Percentage thes./res.	Percentage thes./stud.	Total Percentage thes./res.	Total Percentage thes./res.
2007	7	14,3%	8,6%	6	12,2%	7,4%	26,5%	16,0%
2008	7	14,6%	9,7%	4	8,3%	5,6%	22,9%	15,3%
Total	14	28,9%	18,3%	10	20,5%	13,0%	49,4%	31,3%

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Thesis concluded in 2007 and 2008

In the table bellow we present the number of thesis concluded in 2007 and 2008, together with the associated journal publications.

	Master	Associated publications	Percentage with publication	PhD	Associated publications	Percentage with publication
2007	7	2	28,6%	6	29	100%
2008	7	9	28,6%	4	18	100%
Total	14	11	28,6%	10	47	100%

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Thesis concluded in 2007 and 2008

In the table bellow we present the number of articles published by the students in 2007 and 2008.

	Students publications	Percentage	Publications per student
2007	35	28,5%	0,43
2008	27	25,5%	0,38
TOTAL	62	27,1%	0,81

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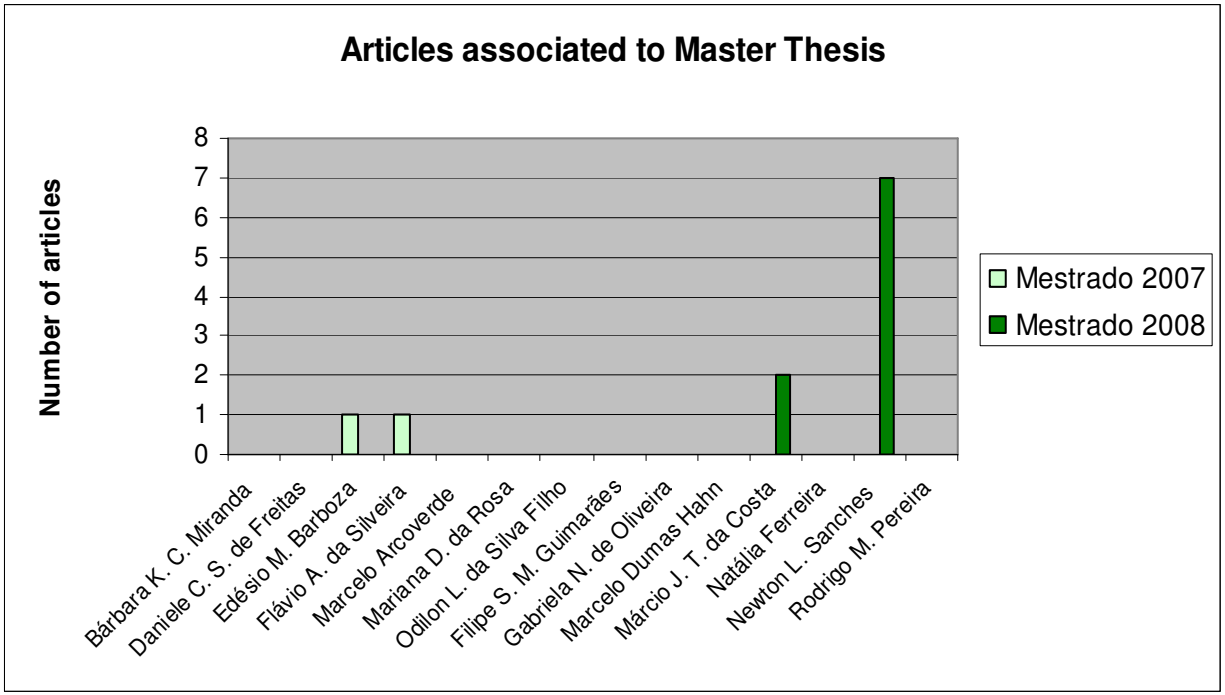
Thesis concluded in 2007 and 2008

We present bellow the distribution of articles published associated to master thesis concluded in 2007 and 2008.



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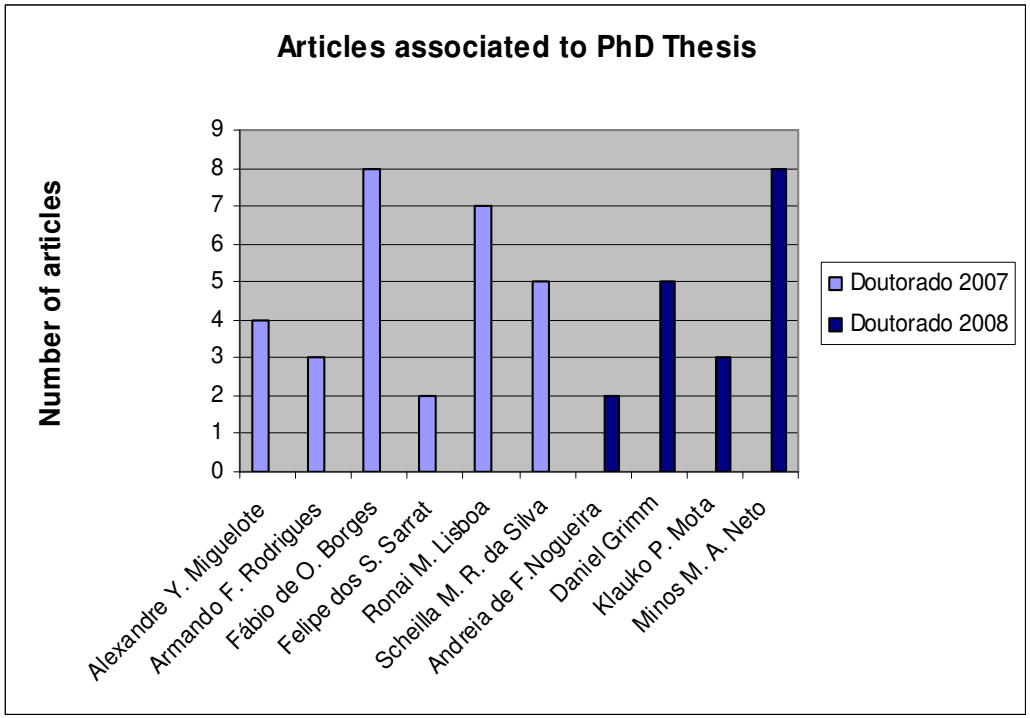
Thesis concluded in 2007 and 2008

We present bellow the distribution of articles published associated to PhD thesis concluded in 2007 and 2008.



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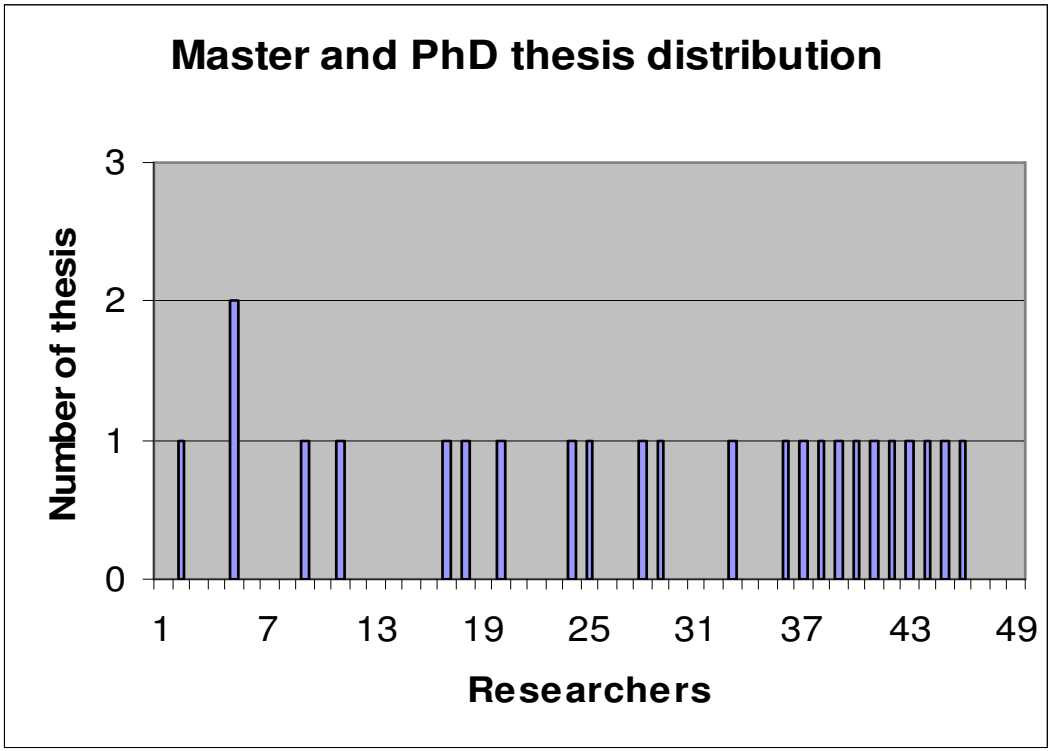
Thesis concluded in 2007 and 2008

We present bellow the distribution of Master and PhD thesis concluded in 2007 and 2008 by our research members.



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Thesis concluded in 2007 and 2008

In the table bellow we present the average conclusion time of master and PhD thesis concluded in 2007 an 2008.

	Average conclusion time (in months)	
	2007	2008
Master	25	31
PhD	59	60

4- SCIENTIFIC PUBLICATIONS

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TABLES 2007 - 2008

QUALIS	NUMBER OF ARTICLES 2007
A1	5
A2	10
B1	52
B2	16
B3	14
B4	9
B5	5
NC	12
TOTAL	123

QUALIS	NUMBER OF ARTICLES 2008
A1	5
A2	12
B1	47
B2	7
B3	7
B4	9
B5	1
NC	18
TOTAL	106

QUALIS	NUMBER OF ARTICLES 2007-2008
A1	10
A2	22
B1	99
B2	23
B3	21
B4	18
B5	6
NC	30
TOTAL	229

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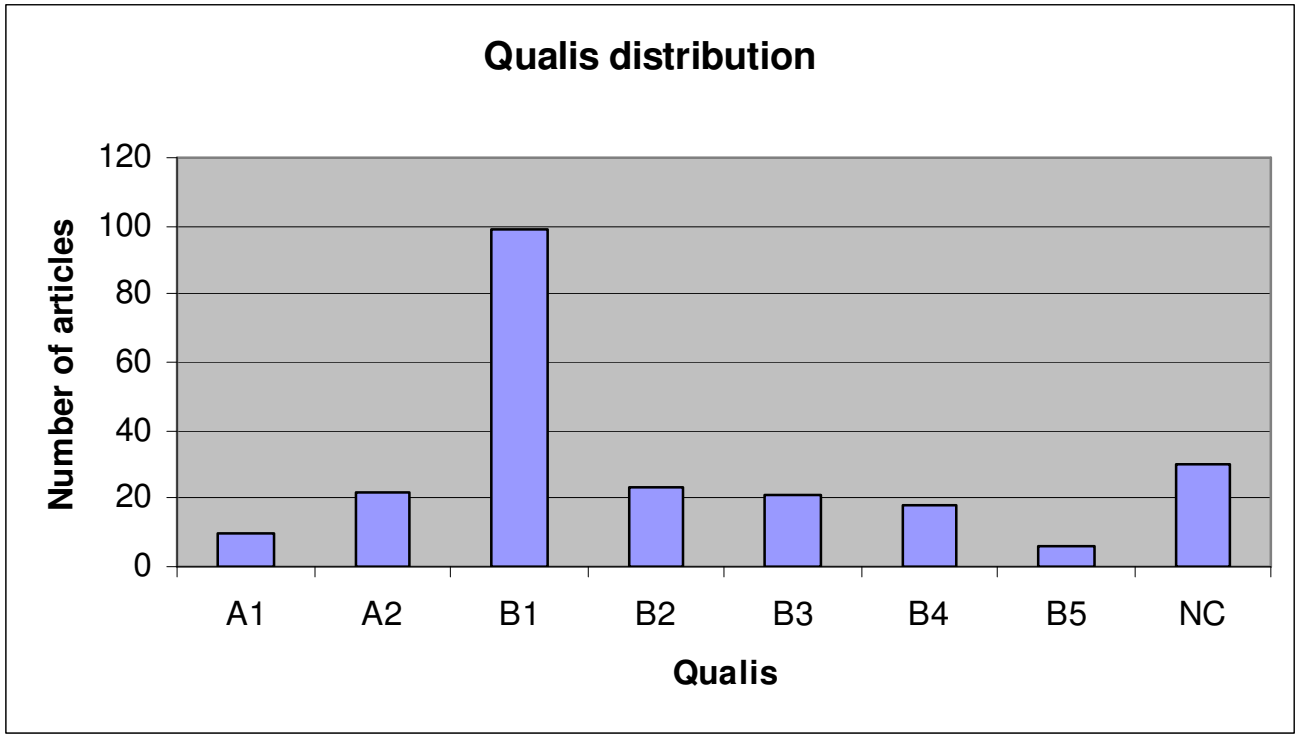
Qualis distribution in 2007-2008



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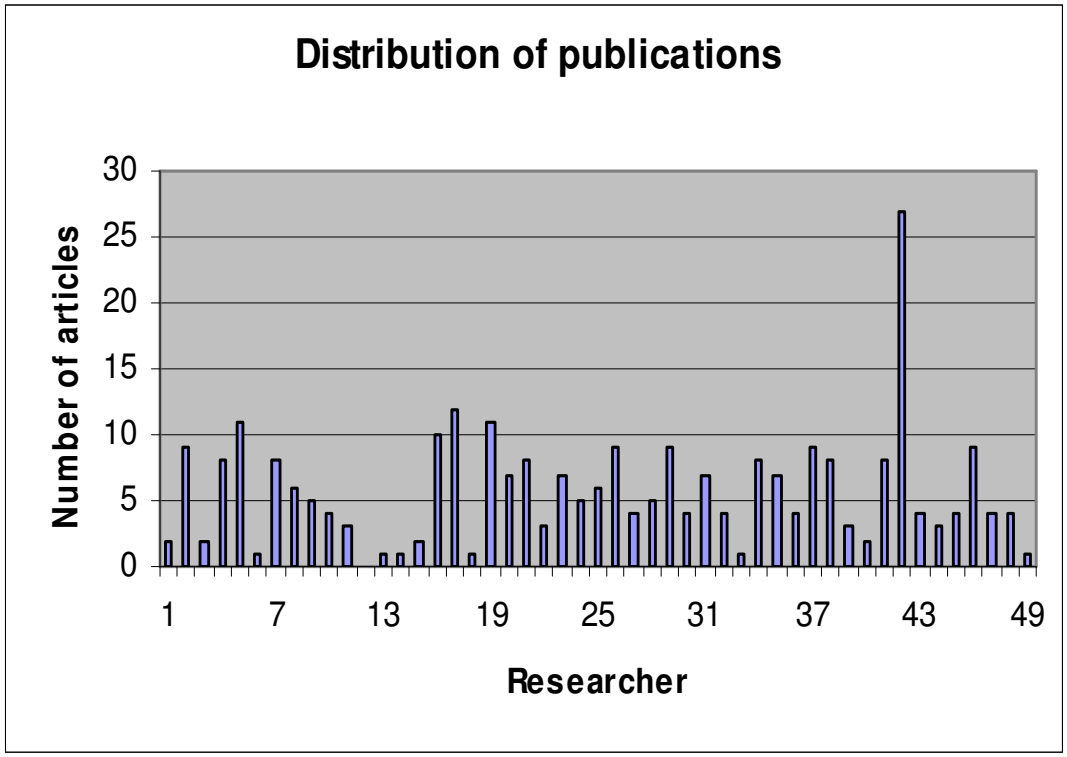
Scientific publications in 2007 and 2008

In the table bellow we present the distribution of scientific publications in 2007 and 2008 by the **researchers** of the program..



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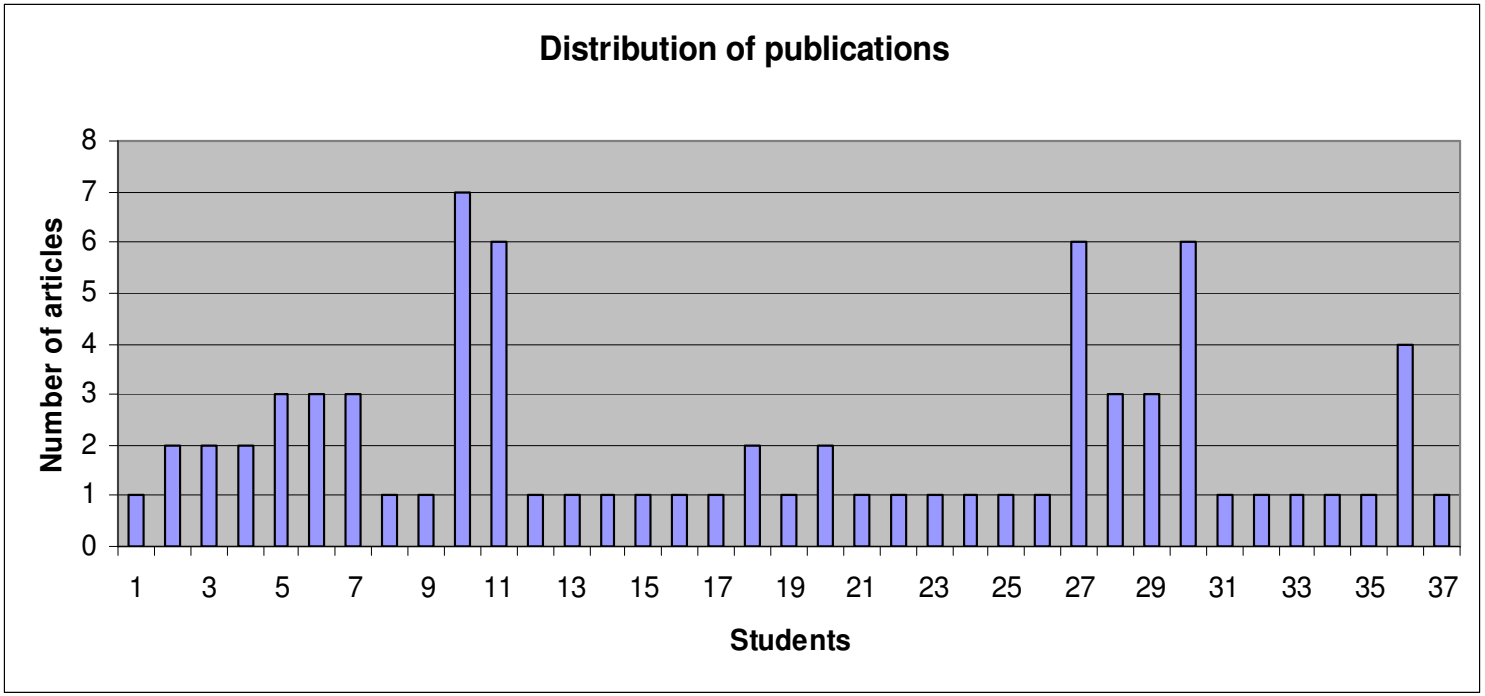
Scientific publications in 2007 and 2008

In the table bellow we present the distribution of scientific publications in 2007 and 2008 by the **students** of the program..These publications are distributed among 37 students from the total of 81.



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5- SOCIAL CONTRIBUTION

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SOCIAL CONTRIBUTION

Regional and National impact

The Fluminense Federal University (UFF) has an Engeneering School in the remote campus at Volta Redonda, in Rio de Janeiro State. The Engeneering School has hired young researchers in Physics which belong to our graduate program. The scientific cooperation with these researchers has motivated the nucleation of a research group in this developing region of the state, what demonstrates the importance of our program to the regional development. Two new laboratories (Optics and Scientific Computation) are being installed at Volta Redonda as part of our policy for the experimental development.

Moreover, many of our students com from different brazilian states like, Amazonas, Rio Grande do Norte, São Paulo, Mato Grosso, Paraná, and Minas Gerais, showing that our program plays an important role in the national scenario. Formal cooperation projects (MINTER and DINTER) with under-developed regions are being submitted.

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SOCIAL CONTRIBUTION

Cooperation with other programs

Our Quantum Optics and Quantum Information group belongs to a national cooperation program (CAPES-PROCAD) involving other Quantum Optics groups from the São Paulo University (USP) and the Pernambuco Federal University (UFPE). This same group is part of another research network (INCT-CNPq) for development of the Quantum Information field. This network involves many different brazilian institutions like UFRJ, UFMG, UNICAMP, USP, UFPE, and others.

In 2008, Profs. Andrea Latgé, Antônio da Costa Tavares, Pedro Venezuela and Roberto Bechara Muniz joined another INCT-CNpq network in the "Nanocarbon" project, also with several other brazilian institutions.

Prof. Andréa Latgé also belongs to the following scientific cooperation project:
- Nanotubes Network (Supervisor: Prof. Marcus Pimenta - UFMG)
- Millenium Institute for Nanoscience (Supervisor: Prof. Belita Koiller - UFRJ)
- INCT-CNPq (Supervisor: Prof. Marcos Pimenta - UFMG)
- CAPES-PROCAD with UFC, UNICAMP, UFF e UFSM

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SOCIAL CONTRIBUTION

Professional development

Our Radioecology Laboratory develops scientific works on subjects of great interest for the environment. In this spirit, the Laboratory has already made courses for the firemen corporation of the Rio de Janeiro state on how to deal with accidents involving radioactive material. They provide basic information for interested professionals on the effects of radiation on biological systems. This is an important example of social contribution.

Scientific diffusion

Another important example of social contribution is our "Casa da Descoberta", a facility devoted to basic experimental demonstrations of the Physics laws for high school students. It recieves regular visits of a considerable number of students from both public and private schools.

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SOCIAL CONTRIBUTION

Visibility

Our homepage is www.if.uff.br/posgrad. Most of the relevant information about our program is available in the website. A new website is being developed with a modern layout and an english version. Our reputation is evidenced by the presence of members of the Brazilian Academy of Science and of "Cientistas do Nosso Estado" – FAPERJ fellows in our program. Moreover, many of our researchers belong to great national network projects with a considerable amount of funding for our research.

Many of our researchers are referees or members of the editorial board of international journals, what is a further indication of international visibility of the program.

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SOCIAL CONTRIBUTION

Visibility

Prof. Paulo Murilo Castro de Oliveira is a member of the editorial board of the following journals: Physica A, Int. J. Mod. Phys. C., Brazilian Journal of Physics and Revista Boliviana de Física. He works as a consultant for several national (CNPq, CAPES, and several state agencies) and international (National Sciance Foundation – EUA e Colciencias – Colômbia) funding agencies. He is also a member of the IUPAP (International Union for Pure and Applied Physics) C13 comission (Physics for Development). Prof. Paulo Murilo is the Brazilian Physical Society (SBF) Vice-President.

Prof. Paulo Roberto Silveira Gomes is editor of the Open Nuclear and Particle Physics Journal.

Our member, Prof. Marco Moriconi, writes regularly for "Ciência Hoje" at the column "*Qual o problema?*" (*What's the problem?).* Prof. Moriconi recieved financial funding from the Rio de Janeiro state agency (FAPERJ) to publish a book with a collection of articles published in this column. This constitutes an important example of external visibility of the knowledge developed in our research activities.

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SOCIAL CONTRIBUTION

Visibility

Another important example of visibility is our "Casa da Descoberta" which is devoted to the introduction of high school students to basic Physics experiments. This project counts on our support, being a good example of social contribution. It provides a wide visibility of the program among youg students.

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SOCIAL CONTRIBUTION

Transparency

Our graduate program is mainly run by the director with the help of four counselors which are members of the program with an outstanding research performance in terms of publications and thesis supervision. The scientific performance required for the counselors is stronger than for the regular members. The main academic decisions concerning the program are discussed wirth counselor, what makes our decisions more clear to the community.

Our students are selected by an exam widely anounced in the web and applied in several brazilian states as well as in different latin american countries. We have a considerable number of foreign students which are always welcome.

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6- EXCELLENCE OF THE PROGRAM
(Characterization as grades 6 and 7)

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Qualification, scientific production and performance

- From the total of 48 permanent members, 32 are CNPq fellows (67%)
- Referees and members of the editorial board of international journals
- Consultants of national and international funding agencies
- Members of the Brazilian Academy of Science
- "Cientistas do Nosso Estado" – FAPERJ
- Significant scientific production, mostly associated to PhD thesis
- Diversity of areas with a significant scientific production
- Important expansion of the experimental research

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National leadership

Our program has international reputation in Statistical Mechanics and Condensed Matter Physics. These areas attract students from several brazilian states and other latin american countries. Our international recognition is also evidenced by the books authored by our members and published world wide.

The UFF research group on Complex Systems represents our main national leadership with international recognition. It is an important achievement since this research domain gives contributions to other sectors of scientific and technological knowledge.

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National and regional impact

The regional impact of the UFF graduate program is evidenced by the number of students coming from the remote regions of the Rio de Janeiro state. This regional impact is also represented by the nucleation of a research group in our remote campus in Volta Redonda.

Our national impact is evidenced by the many students coming from other brazilian states or latin american countries. Some of our researches act as consultants for national funding agencies.

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International cooperation

Our program has many international scientific cooperation projects in different research fields: CIAM (Brasil, Argentina, Chile, USA), CNPq-CNRS (Brasil-France), CAPES-COFECUB (Brasil-France), CAPES-PROBRAL (Brasil-Germany), CNPQ-PROSUL (Brasil, Argentina, Uruguai), CNPq-NSF (Brasil-USA), CNPq-Edital 040-2007 (Brasil-India).

Our research group in Complex Systems has regular scientific cooperation with groups in France, Germany and Poland.

THE END

Informações (mínimas) a serem apresentadas na reunião de avaliação continuada referente aos anos de 2007/2008

Astronomia e Física

PROPOSTA DO PROGRAMA

1.1 Informar as áreas de concentração, linhas de pesquisa, projetos em andamento e proposta curricular.
1.2. Informar se o programa tem Planejamento com vistas a seu desenvolvimento futuro, contemplando os desafios internacionais da área na produção do conhecimento, seus propósitos na melhor formação de seus alunos, suas metas quanto à inserção social mais rica de seus egressos, conforme os parâmetros da área. (Indicar se está disponível na homepage ou entregar cópia impressa no dia da reunião)
1.3 – Informar Infra-estrutura para ensino, pesquisa e, se for o caso, extensão.

CORPO DOCENTE

2.1 - Apresentar tabela (exemplo abaixo) com número de docentes permanentes, colaboradores e visitantes, indicando ano e qualificação da última titulação, e nível da disciplina (graduação ou pós-graduação) que ministrou aulas nos anos de 2007 e 2008.

Nome do Docente	P, C ou V		Titulação	Ano	Disciplina 2007 (G ou PG)	Disciplina 2008 (G ou PG)	Nível Bolsa CNPq
	2007	2008					

1. Indicar para cada docente se é permanente (P), colaborador C, ou visitante (V), indicando na coluna, por ano, em ordem decrescente P, C e V.
2. Indicar se a disciplina ministrada em 2007 e 2008 foi de graduação (G) ou pós graduação (PG).

CORPO DISCENTE,TESES E DISSERTAÇÕES

3.1 - Apresentar tabela com número de teses e dissertações defendidas no período de avaliação, percentual em relação ao corpo docente permanente e à dimensão do corpo discente.
3.2 - Informar a distribuição das orientações das teses e dissertações defendidas no período de avaliação em relação aos docentes do programa.
3.3 - Informar se há trabalhos publicados associados a cada tese ou dissertação
3.4 – Informar o tempo de formação de mestres e doutores, e percentual de bolsistas titulados.

1. Colocar na forma de tabela, onde possível

PRODUÇÃO INTELECTUAL

4.1 - Apresentar tabela com publicações qualificadas do Programa, de acordo com a nova classificação qualis (anexo)
4.2 - Indicar a distribuição de publicações qualificadas em relação ao corpo docente permanente do Programa, e em relação ao corpo discente.
4.3 - Informar sobre a produção técnica, patentes e outras produções consideradas relevantes.

1. Segue anexo a tabela aprovada pelo CTC com o novo QUALIS

2. Para os periódicos que não estiverem na tabela (de outras áreas, ou mesmo outros periódicos que não estavam no triênio anterior) classificar de acordo com o fator de impacto de 2007 (anexo).

INSERÇÃO SOCIAL

5.1 – Indicar dados tangíveis sobre inserção e impacto regional e (ou) nacional do Programa.
5.2 – Indicar dados tangíveis sobre a integração e cooperação com outros programas e centros de pesquisa e desenvolvimento profissional relacionados à área de conhecimento do programa.
5.3 - Indicar dados tangíveis sobre a visibilidade ou transparência dada pelo programa à sua atuação.

Para os programas 6 e 7

6.1 – Informar dados tangíveis que indiquem níveis de qualificação, de produção e de desempenho equivalentes aos dos centros internacionais de excelência na formação de recursos humanos.
6.2 – Informar dados tangíveis que indiquem consolidação e liderança nacional do Programa como formador de recursos humanos para a pesquisa e pós-graduação.
6.3 – Informar dados tangíveis que indiquem inserção e impacto regional e nacional do Programa;
6.4 – Demonstrar Inserção Internacional e Integração com Centros Internacionais.