

Sergio S. Botelho

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OBJECTIVE

Seeking an entry-level position in either an industrial or academic environment, in which I could apply my thorough grounding in fundamental physics concepts, together with my mathematical background and computer skills, to work on the areas of software design and/or hardware manufacturing.

EDUCATION

Georgia Institute of Technology, Atlanta, GA.

- Ph.D. in Physics (Fall '01 – present) - Overall GPA: 3.88/4.0
- Minor degree in Computer Science
- Expected termination date: Fall/2005 (earlier if necessary)

Universidade Federal Fluminense, Rio de Janeiro, Brazil.

- Master's degree in Physics (2000 - 2001). Thesis: "*Universality in a statistical model for branched polymers.*"
- Bachelor's degree in Physics (1996 - 1999) – Final GPA: 9.7/10

COMPUTER SKILLS

- Operating Systems: UNIX (Linux, Solaris), MS-Windows.
- Programming Languages: C, C++, Fortran, Delphi, Basic (and HTML).
- Text Processors: Latex, MS-Word, MS-Power-Point.
- Text editors: Emacs, Vi, Pico.
- Graphics softwares: Gnuplot, SM, Xfig, Origin.
- Algebraic computation packages: Maple, Mathematica, Octave.
- Parallel computing libraries: MPI, OpenMP, Pthreads.
- Experience with network administration.
- Knowledge of theoretical and applied cryptography.
- PC hardware and software maintenance in general.

LANGUAGE SKILLS

English (native-like), Portuguese (native speaker), Spanish (good knowledge), French (basic knowledge).

EXPERIENCE

School of Physics, Georgia Institute of Technology, Atlanta, GA. (2001 – 2005)

- **Research experience:** Performed both analytical and numerical calculations related to the theoretical study of multiple topics in solid state physics. In particular, I am currently involved in the mathematical analysis and in the development of computer codes to investigate the physical behavior of high-critical-temperature superconductors and fermionic atomic gases.
- **Teaching experience:** Worked as an instructor for introductory physics laboratory classes for engineering and physics majors (8 semesters so far). Also worked as a grader for undergraduate and graduate level physics courses, being responsible for preparing and grading homeworks and quizzes, and for helping students with the course material through regular office hours. (3 semesters so far).

AWARDS

Assistantships/Scholarships:

- Full Graduate Teaching Assistantship for pursuing Ph.D. study, School of Physics, Georgia Institute of Technology, Atlanta, GA. (Fall 2001 – present).
- Full Scholarship for pursuing Master's study, CNPq, Brazil (March 2000 to April 2001).

Fellowships:

- 2004 Gil Amelio Fellowship for "outstanding graduate student performance" (\$1,500).

Travel Grants:

- Travel grant for March Meeting 2005 at Los Angeles, CA (\$700).
- Travel grant for March Meeting 2004 at Quebec, Canada (\$900).
- Travel grant for Gordon Conference 2004 at South Hadley, MA (\$400).
- Travel grant for March Meeting 2003 at Austin, TX (\$650).

PUBLICATIONS

- Botelho, S. S. and Sa de Melo, submitted to Journal of Low Temperature Physics (see also cond-mat/0409357 (2005)).
- Botelho, S. S. and Sa de Melo, C. A. R, accepted for publication at Physical Review B (see also cond-mat/0409368 (2004)).
- Botelho, S. S. and Reis, F. D. A., Physical Review E **65**, 032101 (2002).
- Botelho, S. S. and Reis, F. D. A., Physical Review E **63**, 011108 (2000).
- Botelho, S. S. and Reis, F. D. A., Physica A **260**, 338 (1998).

CONFERENCE PRESENTATIONS

- Sergio Botelho, "*BCS-to-BEC Quantum Phase Transition in d-wave Superconductors*", Gordon Conference on Correlated Electron Systems, South Hadley, MA, June 2004.
- Sergio Botelho and Carlos Sa de Melo, "*Lifshitz Transition in d-wave Superconductors*", APS March Meeting 2004, Montreal, QC, Canada.
- Sergio Botelho, Carlos Sa de Melo and Richard Duncan, "*Topological Quantum Phase Transition in d-wave Superconductors*", APS March Meeting 2003, Austin, TX.
- Sergio Botelho and Fabio Reis, "*Universality in a branched polymer growth model*", XXIII National Meeting on Condensed Matter Physics, Sao Lourenco, MG, Brazil (2000).
- Sergio Botelho and Fabio Reis, "*On the universality class of a statistical model for branched polymers*", XXIV National Meeting on Condensed Matter Physics, Sao Lourenco, MG, Brazil (2001).

ACTIVITIES

- American Physical Society.
- Sociedade Brasileira de Fisica (Brazilian Physics Society).