

1 Personal Data

Name:	Andrei V. Frolov	Work address:	Simon Fraser University
Date of birth:	11 March 1976		Department of Physics
Place of birth:	Moscow, USSR		8888 University Drive
Citizenship:	Canada and Russia		Burnaby BC Canada
Sex:	Male		V5A 1S6
Marital status:	Single		Phone: 1(604)291-3787
			Fax: 1(604)291-3592

Email: frolov@sfu.ca

WWW: <http://www.sfu.ca/~frolov/>

2 Research Interests

Cosmology, inflation, observational tests of early Universe theories, gravitation, black hole physics, numerical relativity.

3 Academic Background

3.a) University degrees:

Degree	Institution	Started	Completed
BSc in Physics (with honors)	Moscow State University, Russia University of Alberta, Canada	09/1992	06/1995
PhD in Physics	University of Alberta, Canada	09/1995	08/2000

PhD program details:

Field of Study: General relativity and cosmology

Thesis title: "Critical behavior in the gravitational collapse of a scalar field"

Advisor: Prof. D. N. Page

3.b) Research experience:

Position	Institution	Period held
Assistant Professor	Physics Department, SFU, Canada	Fall 2006 – present
Postdoctoral Fellow	KIPAC/SITP, Stanford University, USA	Fall 2003 – Fall 2006
Postdoctoral Fellow	CITA, University of Toronto, Canada	Fall 2000 – Fall 2003

3.c) Teaching experience:

Position	Institution	Period held
Assistant Professor	Simon Fraser University, Canada	Fall 2006 – present
Teaching Assistant	University of Alberta, Canada	Fall 1995 – Spring 1999

4 Publication List

Articles published in refereed journals

1. A. V. Frolov, K. R. Kristjánsson and L. Thorlacius, *Global geometry of two-dimensional charged black holes*, Phys. Rev. D **73**, 124036 (2006) [hep-th/0604041].
2. M. A. Amin and A. V. Frolov, *Persistent Patterns in Accretion Disks*, Mon. Not. R. Astron. Soc. **370**, L42-L45 (2006) [astro-ph/0603687].
3. A. V. Frolov, K. R. Kristjánsson and L. Thorlacius, *Semi-classical geometry of charged black holes*, Phys. Rev. D **72**, 021501(R) (2005) [hep-th/0504073].
4. A. V. Frolov, *Is it really naked? On cosmic censorship in string theory*, Phys. Rev. D **70**, 104023 (2004) [hep-th/0409117].
5. A. V. Frolov, *Accretion of ghost condensate by black holes*, Phys. Rev. D **70**, 061501(R) (2004) [hep-th/0404216].
6. J. Martin, G. N. Felder, A. V. Frolov, L. Kofman and M. Peloso, *BRANECODE: A program for simulations of braneworld dynamics*, Comput. Phys. Commun. **171**, 69 (2005) [hep-ph/0404141].
7. A. V. Frolov and L. Kofman, *Can inflating braneworlds be stabilized*, Phys. Rev. D **69**, 044021 (2004) [hep-th/0309002].
8. J. Martin, G. N. Felder, A. V. Frolov, M. Peloso and L. Kofman, *Braneworld dynamics with the BraneCode*, Phys. Rev. D **69**, 084017 (2004) [hep-th/0309001].
9. A. V. Frolov and U. L. Pen, *The naked singularity in the global structure of critical collapse spacetimes*, Phys. Rev. D **68**, 124024 (2003) [gr-qc/0307081].
10. A. V. Frolov and V. P. Frolov, *Black holes in a compactified spacetime*, Phys. Rev. D **67**, 124025 (2003) [hep-th/0302085].
11. A. V. Frolov and L. Kofman, *Inflation and de Sitter thermodynamics*, JCAP **0305**, 009 (2003) [hep-th/0212327].
12. A. V. Frolov and L. Kofman, *Gravitational waves from braneworld inflation*, hep-th/0209133 (submitted to Phys. Rev. D).
13. A. V. Frolov, L. Kofman and A. A. Starobinsky, *Prospects and problems of tachyon matter cosmology*, Phys. Lett. B **545**, 8 (2002) [hep-th/0204187].
14. G. N. Felder, A. V. Frolov, L. Kofman and A. Linde, *Cosmology with negative potentials*, Phys. Rev. D **66**, 023507 (2002) [hep-th/0202017].
15. G. N. Felder, A. V. Frolov and L. Kofman, *Warped geometry of brane worlds*, Class. Quant. Grav. **19**, 2983 (2002) [hep-th/0112165].
16. A. V. Frolov, *Kasner-AdS spacetime and anisotropic brane-world cosmology*, Phys. Lett. B **514**, 213 (2001) [gr-qc/0102064].
17. A. V. Frolov, *Continuous self-similarity breaking in critical collapse*, Phys. Rev. D **61**, 084006 (2000) [gr-qc/9908046].
18. A. V. Frolov and A. L. Larsen, *Chaotic scattering and capture of strings by black hole*, Class. Quant. Grav. **16**, 3717 (1999) [gr-qc/9908039].

19. A. V. Frolov, *Critical collapse beyond spherical symmetry: General perturbations of the Roberts solution*, Phys. Rev. D **59**, 104011 (1999) [gr-qc/9811001].
20. A. V. Frolov, *Self-similar collapse of scalar field in higher dimensions*, Class. Quant. Grav. **16**, 407 (1999) [gr-qc/9806112].
21. A. V. Frolov, *Perturbations and critical behavior in the self-similar gravitational collapse of a massless scalar field*, Phys. Rev. D **56**, 6433 (1997) [gr-qc/9704040].

Conference proceedings and other non-refereed publications

22. A. V. Frolov, G. N. Felder, J. Martin, M. Peloso and L. Kofman, *Stability and dynamics of braneworlds*, in proceedings of 6th RESCEU Symposium: Frontier in Astroparticle Physics and Cosmology (November 2003, University of Tokyo, Tokyo, Japan).
23. A. V. Frolov and L. Kofman, *Gravitational waves from brane-world inflation*, in proceedings of COSMO-02: International Workshop on Particle Physics and the Early Universe (October 2002, Chicago, Illinois, USA).
24. G. N. Felder, A. V. Frolov, L. Kofman and A. Linde, *Scalar field cosmology with negative potentials*, in proceedings of 11th Workshop on General Relativity and Gravitation, pp. 284–291 (January 2002, Waseda University, Tokyo, Japan).
25. G. N. Felder, A. V. Frolov and L. Kofman, *Warped geometry of brane worlds with scalar fields*, in proceedings of 2nd Workshop on Braneworlds - Dynamics of space-time with boundary (January 2002, Yukawa Institute for Theoretical Physics, Kyoto, Japan).
26. A. V. Frolov, *Kasner-AdS spacetime and anisotropic brane-world cosmology*, in proceedings of 9th Canadian Conference on General Relativity and Relativistic Astrophysics (May 2001, University of Alberta, Edmonton, Alberta, Canada).
27. A. V. Frolov and A. L. Larsen, *Chaotic scattering and capture of cosmic strings by black hole*, in proceedings of 15th Lake Louise Winter Institute: From Particles to the Universe, pp. 213–218 (February 2000, Lake Louise, Alberta, Canada).
28. A. V. Frolov, *Critical collapse of a massless scalar field: Perturbative approach*, in proceedings of 8th Canadian Conference on General Relativity and Relativistic Astrophysics, pp. 141–145 (June 1999, McGill University, Montreal, Québec, Canada).
29. A. V. Frolov, *Perturbations and critical behavior in the self-similar gravitational collapse*, in proceedings of 7th Canadian Conference on General Relativity and Relativistic Astrophysics, (June 1997, University of Calgary, Calgary, Alberta, Canada).

5 Professional Activities

Conference presentations

1. APCTP-TPI Meeting: Gravity, Cosmology, and Astrophysics - II (December 2006, University of Alberta, Edmonton, Alberta, Canada), invited talk *FIR filters for gravitational wave burst detection*.
2. APCTP-TPI Meeting: Gravity, Cosmology, and Astrophysics - II (December 2006, University of Alberta, Edmonton, Alberta, Canada), invited talk *Persistent patterns in accretion disks*.
3. CASCA 2006: Future Directions & Science with the Next Generation of International Telescopes (June 2006, Calgary, Canada), contributed talk *Persistent patterns in accretion disks*.
4. Yukawa International Seminar 2005: The Next Chapter in Einstein's Legacy (June 2005, Yukawa Institute for Theoretical Physics, Kyoto, Japan), poster presentation *Semi-classical geometry of charged black holes*.
5. The Dark Side of Extra Dimensions (May 2005, BIRS, Banff, Alberta, Canada), contributed talk *Cosmic censorship in string theory*.
6. Black Holes V: Theory and Mathematical Aspects (May 2005, Banff, Alberta, Canada), contributed talk *Semi-classical geometry of charged black holes*.
7. 11th Canadian Conference on General Relativity and Relativistic Astrophysics (May 2005, UBC, Vancouver, British Columbia, Canada), contributed talk *Accretion of ghost condensate by black holes*.
8. COSMO-04: International Workshop on Particle Physics and the Early Universe (September 2004, Toronto, Ontario, Canada), contributed talk *Naked singularities and cosmic censorship in string theory*.
9. Fermilab de Sitter Days Workshop (November 2003, Fermilab, Batavia, IL, USA), invited talk *Can inflating braneworlds be stabilized?*.
10. Workshop on Brane Worlds (October 2003, Tokyo Institute of Technology, Tokyo, Japan), contributed talk *Can inflating braneworlds be stabilized?*.
11. 6th RESCEU Symposium: Frontier in Astroparticle Physics and Cosmology (November 2003, University of Tokyo, Tokyo, Japan), contributed talk *Stability and dynamics of braneworlds*.
12. Black Holes IV: Theory and Mathematical Aspects (May 2003, Honey Harbour, Ontario, Canada), contributed talk *Black holes in a compactified spacetime*.
13. 10th Canadian Conference on General Relativity and Relativistic Astrophysics (May 2003, University of Guelph, Guelph, Ontario, Canada), contributed talk *Inflation and de Sitter thermodynamics*.
14. 18th Lake Louise Winter Institute: Particles and the Universe (February 2003, Lake Louise, Alberta, Canada), contributed talk *Gravitational waves from brane-world inflation*.

15. COSMO-02: International Workshop on Particle Physics and the Early Universe (October 2002, Chicago, Illinois, USA), contributed talk *Gravitational waves from brane-world inflation*.
16. 11th Workshop on General Relativity and Gravitation (January 2002, Waseda University, Tokyo, Japan), contributed talk *Scalar field cosmology with negative potentials*.
17. 2nd Workshop on Braneworlds - Dynamics of spacetime with boundary (January 2002, Yukawa Institute for Theoretical Physics, Kyoto, Japan), contributed talk *Warped geometry of brane worlds with scalar fields*.
18. 2001 Atlantic General Relativity and Cosmology Meeting: Early Universe String and Brane Cosmology (October 2001, Antigonish, Nova Scotia, Canada), invited talk *Conformal maps and gravitational perturbations of braneworlds*.
19. International Workshop on Physics and Astrophysics of Extra Dimensions (June 2001, Paris, France), contributed talk *Conformal properties of brane-worlds*.
20. Black Holes III: Theory and Mathematical Aspects (May 2001, Kananaskis, Alberta, Canada), contributed talk *Accretion of cosmological scalar field by a black hole*.
21. 9th Canadian Conference on General Relativity and Relativistic Astrophysics (May 2001, University of Alberta, Edmonton, Alberta, Canada), contributed talk *Kasner-AdS spacetime and anisotropic brane-world cosmology*.
22. 15th Lake Louise Winter Institute: From Particles to the Universe (February 2000, Lake Louise, Alberta, Canada), contributed talk *Chaotic scattering and capture of strings by black hole*.
23. 8th Canadian Conference on General Relativity and Relativistic Astrophysics (June 1999, McGill University, Montreal, Québec, Canada), contributed talk *Critical collapse of scalar field beyond spherical symmetry*.
24. Black Holes: Theory and Mathematical Aspects (June 1997, Banff, Alberta, Canada), contributed talk *Perturbations and critical behavior in self-similar gravitational collapse*.
25. 7th Canadian Conference on General Relativity and Relativistic Astrophysics, (June 1997, University of Calgary, Calgary, Alberta, Canada), contributed talk *Perturbations and critical behavior in gravitational collapse*.

Other conferences attended

26. Unruh & Wald Fest: A Celebration of the Careers & 60th Birthdays of W. G. Unruh & R. M. Wald (August 2006, UBC, Vancouver, BC, Canada).
27. 208th Meeting of the American Astronomical Society (June 2006, Calgary, Canada).
28. Extra-dimensions: Achievements, Unsolved problems and Prospects (July 2005, Yukawa Institute for Theoretical Physics, Kyoto, Japan).
29. The 59th Yamada conference: Inflating horizon of particle astrophysics and cosmology (June 2004, University of Tokyo, Tokyo, Japan).
30. The XXII Texas Symposium on Relativistic Astrophysics (December 2004, Stanford, CA, USA).

31. Beyond Einstein: From the Big Bang to Black Holes (May 2004, SLAC, Stanford, CA, USA).
32. X-Ray Polarimetry Workshop (February 2004, SLAC, Stanford, CA, USA).
33. Superstring Cosmology (October 2003, KITP, Santa Barbara, CA, USA).
34. Challenges to the Standard Paradigm: Fundamental Physics and Cosmology (November 2002, Irvine, CA, USA).
35. 17th Lake Louise Winter Institute: Fundamental Interactions (February 2002, Lake Louise, Alberta, Canada).
36. 16th Lake Louise Winter Institute: Fundamental Interactions (February 2001, Lake Louise, Alberta, Canada).
37. Black Holes II: Theory and Mathematical Aspects (June 1999, Val Morin, Québec, Canada).

Invited lectures and seminars

38. TRIUMF, Vancouver, BC, Canada (October 2006), *Persistent patterns in accretion disks*.
39. Canadian Institute for Theoretical Astrophysics, Toronto, Ontario, Canada (June 2006), *FIR filters for gravitational wave burst detection*.
40. Tufts University, Medford, MA, USA (February 2006), *Our Universe and extra dimensions*.
41. Simon Fraser University, Burnaby, BC, Canada (February 2006), *Our Universe and extra dimensions*.
42. Tokyo Institute of Technology, Tokyo, Japan (April 2005), *Semi-classical geometry of charged black holes*.
43. University of Tokyo, Tokyo, Japan (April 2005), *Naked singularities and cosmic censorship in string theory*.
44. Yukawa Institute for Theoretical Physics, Kyoto, Japan (April 2005), *Semi-classical geometry of charged black holes*.
45. University of Alberta, Edmonton, Alberta, Canada (March 2005), *Gravity, cosmology, and extra dimensions*.
46. University of California, Irvine, CA, USA (January 2005), *Cosmic censorship in string theory*.
47. University of California, Davis, CA, USA (November 2004), *Cosmic censorship in string theory*.
48. University of Texas, Austin, TX, USA (February 2003), *Braneworld cosmology*.
49. Simon Fraser University, Burnaby, BC, Canada (January 2003), *Braneworld cosmology*.
50. Fermilab, Batavia, IL, USA (January 2003), *Braneworld cosmology*.
51. Dalhousie University, Halifax, Nova Scotia, Canada (October 2001), *Brane-world cosmology*.

52. University of Alberta, Edmonton, Alberta, Canada (August 2001), *Conformal mapping of brane-worlds*.
53. University of Waterloo, Ontario, Canada (March 2001), *Kasner-AdS spacetime and anisotropic brane-world cosmology*.
54. Canadian Institute for Theoretical Astrophysics, Toronto, Ontario, Canada (April 2000), *Chaotic scattering and capture of strings by black hole*.
55. Center for Relativity, University of Texas, Austin, USA (March 1998), *Critical behavior in gravitational collapse*.

6 Miscellaneous

Computer skills:

- numerical methods and scientific computing
- software development (C, Fortran, Perl, Prolog, Tcl, etc.)
- CAE/CAD (Spice, Eagle, etc.)
- relational databases (SQL)
- web design (static HTML and database-backed services)
- system administration (Linux/Unix)

Other skills:

- electronics and circuit design (schematics and board level), low noise analog data conversion and amplification, some experience with RF design
- chemistry (high school with specialization in chemistry, practicum in Mendeleev University of Chemical Technology (Moscow, Russia), first place in the Moscow city-wide chemistry competition for high school students)

Professional service:

- referee for Phys. Rev. D, Phys. Rev. Lett., JCAP, JHEP, Phys. Lett. B, Gen. Rel. and Grav., and A&A
- COSMO-04 organizing committee
- CITA Annual Report committee
- CITA Web committee
- CITA Online Preprint Rack maintainer
- help with several conferences organized by University of Alberta Physics Department (graphic design of posters and web pages)

Scientific collaborators:

- G. N. Felder (Smith College)
- L. Kofman (CITA)
- A. L. Larsen (University of Odense)
- A. Linde (Stanford University)
- J. Martin (CITA)
- M. Peloso (University of Minnesota)
- U.-L. Pen (CITA)
- A. A. Starobinsky (Landau Institute for Theoretical Physics)
- L. Thorlacius (University of Iceland)

Languages:

- English (fluent)
- Russian (fluent)
- Japanese (studying)

7 Extra-Curricular Activities

My hobbies include outdoor sports, photography, computers and electronics. I am an accomplished backpacker with many kilometers of wilderness trails behind me, often solo. I also enjoy nature photography. I developed and maintain a free software project Scarse (<http://www.scarse.org/>), which is a tool for color calibration and management for Unix workstations. It received a fair amount of interest from Linux community, with estimated installation base of several thousand users (based on a number of downloads). I am interested in electronics, particularly analog circuitry and audio frequency amplification, and design and build electronic hardware for fun.