Curriculum Vitae
Kevork N. Abazajian

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Positions

2006 - present	*Assistant Professor*
	Department of Physics, University of Maryland, College Park
2003 - 2006	*Director's Postdoctoral Fellow*
	Theoretical Division, T-6 & T-8
	Theoretical Astrophysics and Elementary Particle and Field Theory
	Los Alamos National Laboratory
2001 - 2003	*Research Associate*
	NASA/Fermilab Theoretical Astrophysics Group
	Fermi National Accelerator Laboratory
	Associate Fellow
	Center for Cosmological Physics, University of Chicago
1997 - 2001	Graduate Research Assistant
	George M. Fuller, University of California, San Diego

Education

2001	Ph.D. Physics, University of California, San Diego
	Thesis: *Neutrino Cosmology and Astrophysics*
	Advisor: George M. Fuller
1997	M.S. Physics, University of California, San Diego
1996	B.S. Physics, University of Houston Honors College
	Magna Cum Laude
	Minors: Mathematics and Philosophy

Honors and Distinctions

Los Alamos National Laboratory Director's Postdoctoral Fellow, 2003
NASA Graduate Student Research Program Fellowship, 1999-2001
University Honors in Physics, University of Houston Honors College
Distinguished Honors Thesis in Physics, University of Houston Honors College
Moody Foundation Scholar, University of Houston Honors College, 1992

Professional Service

Referee, Phys. Rev. Lett., Phys. Rev. D, Astrophys. J., Astrophys. J. Lett., Phys. Lett. B, J. of Cos. & Astropart. Phys., Mon. Not. Roy. Astro. Soc.
Organizer, *Aspen Winter Workshop*, Neutrino Physics and Astrophysics, 2007
Organizer, *Santa Fe Cosmology Workshop*, LANL, Santa Fe, 2003-2006
Organizer, *Workshop on Neutrino News from the Lab and the Cosmos*, Fermilab, Oct. 2002

Publications

1. **"Limits on the radiative decay of sterile neutrino dark matter from the unresolved cosmic and soft X-ray backgrounds"**
   K. N. Abazajian, M. Markevitch, S. M. Koushiappas and R. C. Hickox
   arXiv:astro-ph/0611144 (Submitted to Phys.Rev.D)

2. **"Light element signatures of sterile neutrinos and cosmological lepton numbers"**
   C. J. Smith, G. M. Fuller, C. T. Kishimoto and K. N. Abazajian
   Phys. Rev. D **74**, 085008 (2006) [arXiv:astro-ph/0608377]

3. **"Cosmological Constraints from the SDSS Luminous Red Galaxies"**
   M. Tegmark *et al.*
   in press, Phys. Rev. D, arXiv:astro-ph/0608632

4. **"Constraints on sterile neutrino dark matter"**
   K. Abazajian and S. M. Koushiappas
   Phys. Rev. D **74**, 023527 (2006) [arXiv:astro-ph/0605271]

5. **"A Large Dark Matter Core in the Fornax Dwarf Spheroidal Galaxy?"**
   L. Strigari, J. Bullock, M. Kaplinghat, A. V. Kravtsov, O. Y. Gnedin,
   K. Abazajian, A. A. Klypin,
   in press, Astrophys. J. [arXiv:astro-ph/0603775]

6. **"Percolation Galaxy Groups and Clusters in the SDSS Redshift Survey: Identification, Catalog, and the Multiplicity Function"**
   A. Berlind *et al.* [SDSS Collaboration]
   Astrophys. J. Supp., **167**, 1 (2006) [arXiv:astro-ph/0601375]

7. **"Linear Cosmological Structure Limits on Warm Dark Matter"**
   K. Abazajian,
   Phys. Rev. D **73**, 063513 (2006) [arXiv:astro-ph/0512631]

8. **"Production and Evolution of Perturbations of Sterile Neutrino Dark Matter"**
   K. Abazajian,
   Phys. Rev. D **73**, 063506 (2006) [arXiv:astro-ph/0511630]

9. **"Precision Determination of the Mass Function of Dark Matter Halos"**
   M. S. Warren, K. Abazajian, D. E. Holz and L. Teodoro
   Astrophys. J. **646**, 881 (2006) [arXiv:astro-ph/0506395]

10. **"Parameterizing the Power Spectrum: Beyond the Truncated Taylor Expansion"**
    K. Abazajian, K. Kadota and E. D. Stewart
    JCAP **0508**, 008 (2005) [arXiv:astro-ph/0507224]

Publications (continued)

11. **"The Nonlinear Cosmological Matter Power Spectrum with Massive Neutrinos"**
K. Abazajian, S. Dodelson, S. Habib, K. Heitmann and E. Switzer
Phys. Rev. D **71**, 043507 (2005) [arXiv:astro-ph/0411552]

12. **"Cosmological lepton asymmetry, primordial nucleosynthesis, and sterile neutrinos"**
K. Abazajian, N. F. Bell, G. M. Fuller and Y. Y. Y. Wong
Phys. Rev. D **72**, 063004 (2005) [arXiv:astro-ph/0410175].

13. **"The Third Data Release of the Sloan Digital Sky Survey"**
SDSS Collaboration [K. Abazajian *et al.*]
Astron. J. **129**, 1775 (2005) [arXiv:astro-ph/0410239]

14. **"Cosmology and the Halo Occupation Distribution from Small-Scale Galaxy Clustering in the Sloan Digital Sky Survey"**
K. Abazajian *et al.*
Astrophys. J. **625**, 613 (2005) [arXiv:astro-ph/0408003].

15. **"The Second Data Release of the Sloan Digital Sky Survey"**
SDSS Collaboration [K. Abazajian *et al.*]
Astron. J. **128**, 502 (2004) [arXiv:astro-ph/0403325]

16. **"Cosmological parameters from SDSS and WMAP"**
M. Tegmark *et al.* [SDSS Collaboration]
Phys. Rev. D **69**, 103501 (2004) [arXiv:astro-ph/0310723]

17. **"The First Data Release of the Sloan Digital Sky Survey"**
SDSS Collaboration [K. Abazajian *et al.*]
Astron. J. **126**, 2081 (2003) [arXiv:astro-ph/0305492]

18. **"Neutrino mass and dark energy from weak lensing"**
K. N. Abazajian and S. Dodelson
Phys. Rev. Lett. **91**, 041301 (2003) [arXiv:astro-ph/0212216]

19. **"Telling three from four neutrinos with cosmology"**
K. N. Abazajian
Astropart. Phys. **19**, 303 (2003) [arXiv:astro-ph/0205238]

20. **"The cosmological bulk neutrino catastrophe"**
K. Abazajian, G. M. Fuller and M. Patel
Phys. Rev. Lett. **90**, 061301 (2003) [arXiv:hep-ph/0011048]

Publications (continued)

21. **"Bulk QCD thermodynamics and sterile neutrino dark matter"**
K. N. Abazajian and G. M. Fuller
Phys. Rev. D **66**, 023526 (2002) [arXiv:astro-ph/0204293]

22. **"Stringent constraints on cosmological neutrino antineutrino asymmetries from synchronized flavor transformation"**
K. N. Abazajian, J. F. Beacom and N. F. Bell
Phys. Rev. D **66**, 013008 (2002) [arXiv:astro-ph/0203442]

23. **"SDSS J124602.54+011318.8: A Highly Luminous Optical Transient at z=0.385"**
D. E. Vanden Berk *et al.* [SDSS Collaboration]
Astrophys. J. **576**, 673 (2002) [arXiv:astro-ph/0111054]

24. **"Direct detection of warm dark matter in the X-ray"**
K. Abazajian, G. M. Fuller and W. H. Tucker
Astrophys. J. **562**, 593 (2001) [arXiv:astro-ph/0106002]

25. **"Testing the cosmic coincidence problem and the nature of dark energy"**
N. Dalal, K. Abazajian, E. Jenkins and A. V. Manohar
Phys. Rev. Lett. **87**, 141302 (2001) [arXiv:astro-ph/0105317]

26. **"Sterile neutrino hot, warm, and cold dark matter"**
K. Abazajian, G. M. Fuller and M. Patel
Phys. Rev. D **64**, 023501 (2001) [arXiv:astro-ph/0101524]

27. **"New connection between central engine weak physics and the dynamics of gamma-ray burst fireballs"**
J. Pruet, K. Abazajian and G. M. Fuller
Phys. Rev. D **64**, 063002 (2001) [arXiv:astro-ph/0009144]

28. **"Can a large neutron excess help solve the baryon loading problem in gamma ray burst fireballs?"**
G. M. Fuller, J. Pruet and K. Abazajian
Phys. Rev. Lett. **85**, 2673 (2000) [arXiv:astro-ph/0004313]

29. **"The increase to the primordial He-4 yield in the two-doublet four-neutrino mixing scheme"**
K. Abazajian, G. M. Fuller and X. Shi
Phys. Rev. D **62**, 093003 (2000) [arXiv:astro-ph/9908081]

30. **"Neutrino-mixing-generated lepton asymmetry and the primordial He-4 abundance"**
X. d. Shi, G. M. Fuller and K. Abazajian
Phys. Rev. D **60**, 063002 (1999) [arXiv:astro-ph/9905259]

Publications (continued)

31. **"Optimization of J_c of YBCO thin films prepared by photo-assisted MOCVD through statistical robust design"**
P. C. Chou, Q. Zhong, K. Abazajian, A. Ignatiev, Q. L. Li, C. Y. Wang, E. E. Deal and J. G. Chen
Physica C: Superconductivity, **254**, 93 (1995)

Conference Proceedings

1. **"The cosmological energy density of neutrinos from oscillation measurements"**
K. Abazajian
arXiv:hep-ph/0312163
Proceedings of NuFact 03, 5th International Workshop on Neutrino Factories & Superbeams, 5-11 June 2003, Columbia University, New York

2. **"Gamma-ray burst afterglows"**
K. Abazajian
Proceedings of Les Rencontres de Physique de la Vallée d' Aoste, La Thuile, Italy, 3-9 March, 2002

3. **"Active-sterile neutrino mixing in the early universe and primordial nucleosynthesis"**
K. Abazajian, X. d. Shi and G. M. Fuller
arXiv:astro-ph/9904052
Proceedings of American Physical Society (APS) Meeting of the Division of Particles and Fields (DPF 99), Los Angeles, CA, 5-9 Jan 1999

4. **"Are gamma-ray bursts signals of supermassive black hole formation?"**
K. Abazajian, G. M. Fuller and X. Shi
arXiv:astro-ph/9812287
Proceedings of International Conference on the Activity of Galaxies and Related Phenomena, Byurakan, Armenia, 17- 21 Aug 1998

5. **"Baryon/anti-baryon inhomogeneity and big bang nucleosynthesis"**
K. Abazajian and G. M. Fuller
arXiv:astro-ph/9812288
Proceedings of 3rd International Symposium on Sources and Detection of Dark Matter in the Universe (DM 98), Santa Monica, CA, 18-20 Feb 1998

Colloquia and Invited Conference Presentations

Neutrinos and the Cosmos
NuFact06, Irvine, California, August, 2006

Neutrino Mass Measurements from the Cosmic Microwave Background and the Sloan Digital Sky Survey
American Physical Society April Meeting, 2006

Sterile Neutrino Production and Perturbation Evolution
Sterile Neutrinos in Astrophysics and Cosmology Conference,
EPFL, Switzerland, March 2006

Sterile Neutrino Dark Matter
New Views of the Universe Symposium, The University of Chicago,
December 2005

Structure, Statistics and Information at All Cosmological Scales
Max Planck Instituted for Astrophysics, Garching, Germany, April 2005

Massive Neutrinos in the New Cosmology
Department of Physics, University of British Columbia, March 2005

Cosmology and Galaxy Formation from All-Scale Galaxy Clustering in the Sloan Digital Sky Survey
Institute of Astronomy, ETH Zürich, Switzerland, October 2004

Neutrino Clustering in Cold Dark Matter Halos
Workshop on Neutrinos and the Early Universe, ECT*, Trento, Italy,
October 2004

Cosmology from the Deeply Nonlinear Regime: the SDSS Two-point Correlation Function
Santa Fe Cosmology Workshop, July 2004

The Galaxy Dark Matter Halo Occupation, Two-point Correlation, and Cosmology
Aspen Winter 2003 Conference on Astrophysics, January 2004

Neutrino Cosmology
Physics Colloquium, New Mexico State University, October 2003

Colloquia and Invited Conference Presentations (continued)

Cosmological Measurements of Neutrino Parameters
Weak Interactions and Neutrinos, Lake Geneva, Wisconsin, October 2003

Precision Cosmological Measurement of Neutrino Mass
Eleventh Lomonosov Conference on Elementary Particle Physics, Moscow State University, August 2003

Massive Neutrinos in the New Cosmology
Joint Experimental and Theoretical Physics Seminar, Fermi National Accelerator Laboratory, April 2003

Sterile Neutrinos in Astrophysics and Cosmology
Neutrino Conference, Kavli Institute for Theoretical Physics, March 2003

Neutrino Cosmology
Aspen Winter 2003 Conference on Particle Physics, January 2003

Telling Three from Four Neutrinos with Cosmology
COSMO-02, International Workshop on Particle Physics and the Early Universe, Chicago, September 2002

Gamma-Ray Burst Afterglows
Les Rencontres de Physique de la Vallée d'Aoste, La Thuile, Italy, March 2002

Are Gamma-Ray Bursts Signals of Supermassive Black Hole Formation?
International Conference on the Activity of Galaxies and Related Phenomena, Byurakan, Armenia, August 1998