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**VITA**  
**Alexander Friedland**  
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**Employment History**

- *Staff Member*, Theoretical Division, LANL, 2005 - present
- *Richard P. Feynman Fellow*, Theoretical Division, LANL, 2002 – 2005
- *Postdoctoral Member*, IAS, Princeton, New Jersey; 2000 – 2002

**Education**

- Ph. D. in Physics, University of California, Berkeley, May 2000
  - *Advisor*: Hitoshi Murayama
  - Title of Ph.D. Dissertation: *Towards the Resolution of the Solar Neutrino Problem*

**Recent Service**

- Fermilab 2012 HEP Science and Technology Review Panel — *2012*
- DOE Comparative Review, Theoretical Particle Physics Panel — *2012 & 2013*
- Organizer of the Santa Fe *INFO* workshop series — *INFO 05, 07, 09, 11, 13*
- Aspen neutrino program (summer 2009), ISOUPS Asilomar Symposium (May 2013)
- Member of the LBNE collaboration since 2011; LBNE Supernova Neutrino Burst group
- Reviewer for the NSF and the DOE Office of Science (HEP Program)
- Referee for *Phys. Rev. Lett.*, *Phys. Rev. D*, *Phys. Lett. B*, *Astroparticle Physics*, *JHEP*, *JCAP*, *Class. & Quantum Gravity*, *Int. J. of Modern Phys. E*, *Eur. Phys. J. A*.

**Selected Publications**

- A. Friedland, M. Giannotti and M. Wise, *Constraining the Axion-Photon Coupling with Massive Stars*, *Phys. Rev. Lett.* **110**, 061101 (2013); *14 citations*; APS Viewpoint highlight at <http://physics.aps.org/articles/v6/14>.

- A. Friedland and I. M. Shoemaker, *Integrating In Dark Matter Astrophysics at Direct Detection Experiments*, Phys. Lett. B **724**, 183 (2013); *9 citations*.
- C. Adams *et al.* [LBNE Collaboration], *Scientific Opportunities with the Long-Baseline Neutrino Experiment*, arXiv:1307.7335 [hep-ex]; *41 citations*.
- J. F. Cherry, J. Carlson, A. Friedland, G. M. Fuller and A. Vlasenko, *Halo Modification of a Supernova Neutronization Neutrino Burst*, Phys. Rev. D **87**, 085037 (2013); [arXiv:1302.1159 [astro-ph.HE]]; *8 citations*.
- J. F. Cherry, J. Carlson, A. Friedland, G. M. Fuller and A. Vlasenko, *Neutrino scattering and flavor transformation in supernovae*, Phys. Rev. Lett. **108**, 261104 (2012); [arXiv:1203.1607 [hep-ph]]; *30 citations*.
- A. Friedland, M. L. Graesser, I. M. Shoemaker and L. Vecchi, *Probing Nonstandard Standard Model Backgrounds with LHC Monojets*, Phys. Lett. B **714**, 267 (2012); [arXiv:1111.5331 [hep-ph]]; *24 citations*.
- K. N. Abazajian *et al.*, *Cosmological and Astrophysical Neutrino Mass Measurements*, Astropart. Phys. **35**, 177 (2011); [arXiv:1103.5083 [astro-ph.CO]]; *77 citations*.
- T. Akiri *et al.* [LBNE Collaboration], *The 2010 Interim Report of the Long-Baseline Neutrino Experiment Collaboration Physics Working Groups*, arXiv:1110.6249 [hep-ex]; *93 citations*.
- H. Duan, A. Friedland, G. C. McLaughlin and R. Surman, *The influence of collective neutrino oscillations on a supernova r-process*, J. Phys. G **38**, 035201 (2011); *36 citations*.
- H. Duan and A. Friedland, *Self-induced suppression of collective neutrino oscillations in a supernova*, Phys. Rev. Lett. **106**, 091101 (2011); *45 citations*.
- A. Friedland, *Self-refraction of supernova neutrinos: mixed spectra and three-flavor instabilities*, Phys. Rev. Lett. **104**, 191102 (2010); *35 citations*; APS highlight at <http://physics.aps.org/synopsis-for/10.1103/PhysRevLett.104.191102>
- A. Bandyopadhyay *et al.* [ISS Physics Working Group], *Physics at a future Neutrino Factory and super-beam facility*, Rept. Prog. Phys. **72**, 106201 (2009); *302 citations*.
- A. Friedland and M. Giannotti, *Astrophysical bounds on photons escaping into extra dimensions*, Phys. Rev. Lett. **100**, 031602 (2008); *10 citations*.
- A. Friedland, K. M. Zurek and S. Bashinsky, *Constraining Models of Neutrino Mass and Neutrino Interactions with the Planck Satellite*, arXiv:0704.3271 [astro-ph]; *19 citations*.
- A. Friedland and A. Gruzinov, *Neutrino signatures of supernova turbulence*, arXiv:astro-ph/0607244; *63 citations*.

- A. Friedland and C. Lunardini, *Two modes of searching for new neutrino interactions at MINOS*, Phys. Rev. D **74**, 033012 (2006); *49 citations*.
- A. Friedland, B. H. J. McKellar and I. Okuniewicz, *Construction and analysis of a simplified many-body neutrino model*, Phys. Rev. D **73**, 093002 (2006); *28 citations*.
- A. Friedland and C. Lunardini, *A test of tau neutrino interactions with atmospheric neutrinos and K2K*, Phys. Rev. D **72**, 053009 (2005); *66 citations*.
- A. Friedland, C. Lunardini and M. Maltoni, *Atmospheric neutrinos as probes of neutrino matter interactions*, Phys. Rev. D **70**, 111301 (2004); *77 citations*.
- A. Friedland, C. Lunardini and C. Peña-Garay, *Solar neutrinos as probes of neutrino – matter interactions*, Phys. Lett. B **594**, 347 (2004); *130 citations*.
- A. Friedland and C. Lunardini, *Neutrino flavor conversion in a neutrino background: Single particle versus multiparticle description*, Phys. Rev. D **68**, 013007 (2003); *55 citations*.
- A. Friedland, H. Murayama and M. Perelstein, *Domain walls as dark energy*, Phys. Rev. D **67**, 043519 (2003) [astro-ph/0205520]; *46 citations*.
- A. Friedland and A. Gruzinov, *A new solution to the solar neutrino deficit*, Astropart. Phys. **19**, 575 (2003) [hep-ph/0202095]; *33 citations*.
- A. Aguirre, C. P. Burgess, A. Friedland and D. Nolte, *Astrophysical constraints on modifying gravity at large distances*, Class. Quant. Grav. **18**, R223 (2001) [hep-ph/0105083]; *49 citations*.
- A. Friedland, *On the evolution of the neutrino state inside the sun*, Phys. Rev. D **64**, 013008 (2001) [hep-ph/0010231]; *45 citations*.
- A. de Gouvea, A. Friedland and H. Murayama, *The dark side of the solar neutrino parameter space*, Phys. Lett. B **490**, 125 (2000); *144 citations*.
- A. Friedland, *MSW effects in vacuum oscillations*, Phys. Rev. Lett. **85**, 936 (2000); APS highlight at <http://physics.aps.org/story/v6/st4>; *50 citations*.
- A. de Gouvea, A. Friedland and H. Murayama, *Earth matter effect in Be-7 solar neutrino experiments*, JHEP **0103**, 009 (2001); [hep-ph/9910286]; *55 citations*.
- A. de Gouvea, A. Friedland and H. Murayama, *Seasonal variations of the Be-7 solar neutrino flux*, Phys. Rev. D **60**, 093011 (1999); [hep-ph/9904399]; *49 citations*.
- A. de Gouvea, A. Friedland and H. Murayama, *Less minimal supersymmetric standard model*, Phys. Rev. D **59**, 095008 (1999); [arXiv:hep-ph/9803481]; *30 citations*.
- A. de Gouvea, A. Friedland and H. Murayama, *Next-to-minimal supersymmetric standard model with the gauge mediation of supersymmetry breaking*, Phys. Rev. D **57**, 5676 (1998); [hep-ph/9711264]; *72 citations*.