

# Alexander Kusenko

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## Professor

Department of Physics and Astronomy  
University of California at Los Angeles  
475 Portola Plaza  
Los Angeles, CA 90095-1547 USA

## Visiting Senior Scientist

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University of Tokyo, Japan

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## Honors

- Fellow of American Physical Society (2008)
  - American Physical Society Outstanding Referee Award (2012)
  - Aspen Center for Physics, general member of the board 2004-2019
  - UCLA Outstanding Teaching Awards 2006, 2007, 2008, 2016
  - Simons Fellow in Theoretical Physics (2021)
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## Education, professional Experience

2007 – present	<ul style="list-style-type: none"><li>• Professor, Physics and Astronomy, UCLA, USA</li><li>• Senior Scientist, Kavli IPMU, University of Tokyo, Japan</li></ul>
2003 – 2007	Associate Professor, Physics and Astronomy, UCLA, USA
1999 – 2003	Assistant Professor, Physics and Astronomy, UCLA, USA RIKEN Fellow, BNL, USA
1998 – 1999	Postdoctoral Researcher, UCLA, USA
1996 – 1998	CERN Fellow, Theory Division, CERN, Switzerland
1994 – 1996	Postdoctoral Researcher, University of Pennsylvania, USA
1994	Ph. D. degree, SUNY at Stony Brook, USA
1990 – 1994	Graduate student, SUNY at Stony Brook, USA
1984 – 1989	Student, Moscow State University, Russia

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## Ph.D. students supervised

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- Eric Cotner (Ph.D. 2018), data scientist at ATD
  - Louis Yang (Ph.D. 2017), postdoc at Institute for the Physics and Mathematics of the Universe, Tokyo
  - Lauren Pearce (Ph.D. 2014) Assistant Professor, Penn State
  - Antoine Calvez (Ph.D. 2011) analyst, ArrowHead Economics in San Francisco
  - Warren Essey (Ph.D. 2011) Software Engineer at Google; Visiting Asst. Prof., UCLA; Co-Founder of Kudu, Inc.
  - Ian Shoemaker (Ph.D. 2010) Assistant Professor of Physics, Virginia Tech
  - Kalliopi Petraki (Ph.D. 2009) Scientific staff member at NIKHEF, Amsterdam, and LPTHE, University of Paris, France
  - Jason Schissel (Ph.D. 2006) Software Engineer at LinkedIn
  - Lee Loveridge (Ph.D. 2005) Professor of Physics, Los Angeles Pierce Community College
  - Marieke Postma (Ph.D. 2002) Permanent Scientific Staff, NIKHEF, Amsterdam

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## Postdoctoral Fellows mentored

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- Dmitri Semikoz, Directeur de Recherche CNRS, APC, Paris, France
  - Silvia Pascoli, Professor, Deputy Director, Institute for Particle Physics Phenomenology, Durham University, Durham, UK
  - Carlos Yaguna, Professor, Universidad Pedagógica y Tecnológica de Colombia, Tunja, Colombia
  - Chad Kishimoto, Assistant Professor, University of San Diego
  - Volodymyr Takhistov, postdoctoral fellow, UCLA

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## Ph.D. and postdoctoral mentors

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- Robert Shrock, Ph. D. Advisor, YITP, Stony Brook University
  - Paul Langacker, Postdoctoral Mentor, U.of Pennsylvania
  - Gino Segre, Postdoctoral Mentor, U.of Pennsylvania

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**Summary talks  
at major conferences**

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**TeV Particle Astrophysics (TeVPA-2015)**

**Conference Summary talk**

October 26–30, 2015, Kashiwa, Japan

**International Conference on Ultra-High Energy Cosmic Rays  
(UHECR-2016),**

**Conference Summary talk**

October 11–14, 2016, Kyoto, Japan

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**Summer schools,  
Invited lectures**

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**Lectures on Dark Matter Gran Sasso Center for Astroparticle Physics**

LNGS, Gran Sasso, Italy, October 21–23, 2014

**Lectures at VI Latinamerican Symposium on High Energy Physics**

**(VI Simposio Latinoamericano de Fisica de Altas Energias,  
VI-Silafae) held jointly with XII Mexican School of Particles and  
Fields (XII-MSPF)**

Puerto Vallarta, Mexico, November 1 – 8, 2006

**Lectures at ICTP Summer School on Particle Physics**

June 13 – 24, 2005, Trieste, Italy

**Lectures at Gran Sasso National Laboratory**

October 21–23, 2014, LNGS, Gran Sasso, Italy,

**Lectures at Second International Summer School**

**in Memory of Bruno Pontecorvo, September 2003, Alushta, Ukraine**

September 2003, Alushta, Ukraine

**Discussions at European School of High-energy Physics**

August 22 – September 4, 1999, Casta-Papiernicka, 1999 Slovak Republic.

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**Public lectures**

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**Public lecture at Family BBQ, Aspen Center for Physics,**

July 30, 2008 and April 25, 2014

broadcast on local TV and available at <http://www.grassrootstv.org>

**Public lecture, Mt. Wilson Observatory Association**

August 28, 2010, Pasadena, CA

**Public lecture, Bigfoot Studios** March 24, 2011, Cebu, Philippines

**Public Q&A, at screening of *Particle Fever* documentary in Los Angeles.**

April 25, 2014, Los Angeles, CA

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## Selected review articles

M. Dine and A. Kusenko, The origin of the matter-antimatter asymmetry, *Rev. Mod. Phys.* **76**, 1 (2004).

A. Kusenko, Sterile neutrinos: the dark side of the light fermions, *Phys. Rept.*, **481**, 1 (2009).

G. B. Gelmini, A. Kusenko, and T. J. Weiler, Through neutrino eyes, *Scientific American* **302N5**, 20 (2010).

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## Departmental Colloquium presentations

1. January 18, 2021, Physics colloquium, University of Groningen
2. September 10, 2020, Physics colloquium, Penn State
3. November 26, 2019, Kavli IPMU colloquium
4. June 25, 2019, IFAE Colloquium, Barcelona, Spain
5. October 4, 2018, Physics and Astronomy Colloquium, Syracuse U.
6. September 27, 2018, Physics and Astronomy Colloquium, NYU
7. April 26, 2018, Physics and Astronomy Colloquium, UC Santa Cruz
8. February 1, 2018, Physics and Astronomy Colloquium, UC Los Angeles
9. November 30, 2016, Physics Colloquium, University of Sydney, Australia
10. June 23, 2016, Physics Colloquium, École Normale Supérieure, Paris, France
11. April 21, 2016, NIKHEF Colloquium, Amsterdam, The Netherlands
12. November 26, 2015, ISAS Colloquium, Institute of Space and Astronautical Science, JAXA, Japan
13. April 21, 2015, Physics Colloquium, Brookhaven National Laboratory, Upton, New York
14. December 18, 2014, Colloquium, Okinawa Institute of Science and Technology (OIST), Okinawa, Japan
15. May 8, 2014, Physics and Astronomy Colloquium, University of California, Riverside
16. March 4, 2014, Astrophysics Colloquium, Kavli Institute for Astrophysics and Space Research, MIT, Cambridge, MA
17. April 4, 2011 Nuclear and Particle Physics Colloquium, Laboratory for Nuclear Science, MIT, Cambridge, MA
18. November 9, 2010 Colloquium, Carnegie Observatories, Pasadena, CA
19. October 7, 2010 Physics Colloquium, University of Toronto, Canada
20. September 8, 2010 Cockroft Colloquium, Daresbury Lab, Warrington, UK
21. April 3, 2009 Physics Colloquium, University of Wisconsin-Madison
22. February 25, 2009 Kavli Colloquium, University of Chicago
23. February 12, 2009 Physics Colloquium, University of California, Irvine
24. September 12, 2008 Physics Colloquium, University of Virginia
25. January 17, 2008 Physics and Astronomy Colloquium, UC Los Angeles
26. October 25, 2007 Physics and Astronomy Colloquium, Johns Hopkins University
27. October 18, 2007 Physics Research Conference (colloquium), Caltech
28. September 29, 2004 Physics Colloquium, University of Illinois in Chicago
29. May 11, 2003 Universidad Nacional Autónoma de México (UNAM) Colloquium, Mexico
30. March 1, 2001 Physics Colloquium, University of California, San Diego
31. December 7, 2000 Physics Colloquium, University of California, Riverside
32. September 25, 2000 Physics Colloquium, University of Washington, Seattle
33. March 20, 2000 Physics Colloquium, California State University, Long Beach
34. January 26, 2000 Physics Colloquium, University of Arizona, Tucson
35. July 2, 1999 NIKHEF Colloquium, Amsterdam

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## Service

- Aspen Center for Physics: board member (2004 – 2019), Member and Chairman of various committees
- Member of several review panels for DOE and NSF, which reviewed DOE laboratories and their departments, experimental proposals, theory proposals
- Member of several and Chairman of one review panel for NASA Astrophysics Theory Programs
- Member of the 7-year review committee, Department of Physics and Astronomy, University of Massachusetts – Amherst, 2017
- Co-convenor of a working group for Snowmass 2013 community study.
- Reviewer for leading scientific journals, including Astronomy and Astrophysics, Astrophysical Journal, Astroparticle Physics, Physical Review Letters, Physical Reviews, Physics Letters, Physics Reports, etc.

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## Conference organization

1. Chair of the Organizing Committee for Focus week on Primordial Black Holes at Kavli IPMU, Japan, December 2-6, 2020
2. Member of the Organizing Committee, The cosmos at high energies, Kavli IPMU, October 18, 2019
3. Chair of the Organizing Committee, Particle Astrophysics and Cosmology, Including Fundamental InteraCtions (PACIFIC-2019) conference, September 1-6, 2019, Moorea, French Polynesia.
4. Chairman of the Organizing Committee, Particle Astrophysics and Cosmology, Including Fundamental InteraCtions (PACIFIC-2018.9) conference, August 31- September 7, 2018, Moorea, French Polynesia.
5. Member of the Organizing Committee, UCLA Dark Matter Conference, February 21-23, 2018, Los Angeles, USA.
6. Chairman of the Organizing Committee, Particle Astrophysics and Cosmology, Including Fundamental InteraCtions (PACIFIC-2018) conference, February 13–19, 2018, Kiroro, Hokkaido, Japan.
7. Chairman of the Organizing Committee, Focus week on Primordial Black Holes, November 13-17, 2017, Kashiwa, Japan
8. Chairman of the Organizing Committee, Particle Astrophysics and Cosmology, Including Fundamental InteraCtions (PACIFIC) conference, September 11–17, 2016, Moorea, French Polynesia.
9. Chairman of the Organizing Committee, Particle Astrophysics and Cosmology, Including Fundamental InteraCtions (PACIFIC) conference, September 12–19, 2015, Moorea, French Polynesia.
10. Chairman of the Organizing Committee, Particle Astrophysics and Cosmology, Including Fundamental InteraCtions (PACIFIC) conference, September 15–20, 2014, Moorea, French Polynesia.
11. Chairman of the Organizing Committee, Particle Astrophysics and Cosmology, Including Fundamental InteraCtions (PACIFIC) conference, September 2–7, 2013, Moorea, French Polynesia.
12. Chairman of the Organizing Committee, Snowbird Workshop on Dark Matter (SnowDARK – 2013), March 22–25 Snowbird, UT, USA.
13. Chairman of the Organizing Committee, Particle Astrophysics and Cosmology, Including Fundamental InteraCtions (PACIFIC) conference, September 1–7, 2012, Moorea, French Polynesia.

14. Chairman of the Organizing Committee, The Snowbird Workshop on TeV Interactions of Gamma rays with Extragalactic Radiation (SnowTIGER), March 26–27, 2012 Snowbird, UT.
15. Chairman of the Organizing Committee, Particle Astrophysics and Cosmology, Including Fundamental Interactions (PACIFIC) conference, September 8–14, 2011, Moorea, French Polynesia.
16. Member of the Organizing Committee, Focus Week Astrophysics of dark matter at IPMU, May 30 – June 3, 2011, Kashiwa, Japan,
17. Member of the Organizing Committee, Snowbird Particle Astrophysics and Cosmology (SnowPAC) conference, 1/30 - 2/5, 2011, Snowbird, UT
18. Member of the Organizing Committee, Snowbird Particle Astrophysics and Cosmology (SnowPAC) conference, March 23–28, 2010, Snowbird, Utah
19. Member of the Organizing Committee, Snowbird Particle Astrophysics and Cosmology (SnowPAC 2009), February 1–7, 2009, Snowbird, UT.
20. Member of the Organizing Committee, Supernova focus week, November 17-21, 2008, IPMU, Kashiwa, Japan
21. Member of the Organizing Committee, From Quantum to Cosmos: Fundamental Physics Research in Space July 6-10, 2008, Airlie, VA
22. Member of the Organizing Committee, Cosmic Connections, April 17-23, 2005, Villa La Magia, Quarrata, Tuscany, Italy.
23. Member of the Organizing Committee, Cosmology and Particle Physics (CAPP-98) workshop, June 8–12, 1998, CERN, Switzerland.

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**Conference presentations: keynote, invited, and contributed talks**

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1. Invited talk at Inflationary Reheating Meets Particle Physics Frontier, KITP, Santa Barbara, February 3-6, 2020.
  2. Invited talk at Focus week on Primordial Black Holes at Kavli IPMU, December 2-6, 2020
  3. Invited talk at The cosmos at high energies, Kavli IPMU, October 18, 2019
  4. Invited Plenary talk at Planck 2019, Granada, June 3-6, 2019
  5. Invited talk at Nuclear Physics Cosmology Workshop, Santa Fe, July 10-12, 2018
  6. Talk at Astronomy and Space Physics, Kyiv, Ukraine, May 29 – June 1, 2018.
  7. Invited talk at Simons Symposium on Illuminating Dark Matter, Schloss Elmau, Germany, May 13 - 19, 2018
  8. Invited talk at Theories of Astrophysical Big Bangs workshop, RIKEN, Wako, Japan, November 11 – 14, 2017
  9. Invited talk at Perspectives in Astroparticle physics from High Energy Neutrinos (PAHEN-2017), September 25–26, 2017
  10. Invited talk at Galileo Galilei Institute workshop on Colliders and the Cosmos, Florence, Italy, August 28 to October 13, 2017
  11. Invited talk at Progress on Old and new Themes in cosmology (PONT), April 24–28, 2017, Avignon, France
  12. Invited Speaker at Theo Murphy international scientific meeting on Higgs Cosmology, March 27–28, 2017, The Royal Society at Chicheley Hall, Buckinghamshire, UK
  13. Invited talk at Aspen Winter Conference The Dawning Era of Gravitational-Wave Astrophysics, February 5–11, 2017, Aspen, USA
  14. Invited talk at the 13th International Symposium on Cosmology and Particle Astrophysics (CosPA 2016), November 28 – December 2, 2016, Sydney, Australia
  15. Summary Talk, and Invited talk at International Conference on Ultra-High Energy Cosmic Rays (UHECR–2016), Kyoto, Japan
  16. Talk at PACIFIC 2016: Particle Astrophysics and Cosmology, Including Fundamental Interactions symposium, September 11–17, 2016, Moorea, French Polynesia.
  17. Keynote Speaker, Bethe Forum on "Dark matter beyond supersymmetry", June 13–17, 2016, Bonn, Germany
  18. Invited talk at 12th International Conference on Low Energy Antiproton Physics (LEAP - 2016), March 6–11, 2016
  19. Invited talk at UCLA Dark Matter conference, February 17 – 19, 2016, Los Angeles, USA
  20. Summary Talk, TeV Particle Astrophysics (TeVPA–2015), October 26–30, 2015, Kashiwa, Japan
  21. Talk at PACIFIC 2015: Particle Astrophysics and Cosmology, Including Fundamental Interactions symposium, September 12–19, 2015, Moorea, French Polynesia.
  22. Invited talk at Berkeley Workshop on Dark Matter Detection, June 8 – 9, 2015, LBNL, Berkeley, USA
  23. Invited talk at the workshop The Near-IR Background II: From Reionization to the Present Epoch, June 1–3, 2015 MPA, Garching Germany
  24. Invited talk at Mass–2015, CP3-Origins, Odense, Denmark, May 18 – 22, 2015.
  25. Invited talk at ICTP workshop on Astrophysical probes of fundamental

physics and off-the-beaten-track dark matter, ICTP, Trieste, Italy, April 13-17, 2015.

26. Invited talk at 50th Rencontres de Moriond session, "Electroweak interactions and unified theories", La Thuile, March 14-21, 2015
27. Talk at PACIFIC 2014: Particle Astrophysics and Cosmology, Including Fundamental Interactions symposium, September 15–20, 2014, Moorea, French Polynesia.
28. Invited talk at Phenomenology 2014 Symposium, May 5–7, 2014, University of Pittsburgh, Pittsburgh PA, USA.
29. Invited talk at Dark Matter in Southern California 2014 (DaMaSC-2014) Symposium, April 17, 2014, Caltech, CA, USA.
30. Invited talk at Dark Matter – 2014 Symposium, February 26–28, 2014, University of California, Los Angeles, CA, USA.
31. Invited talk at The 12th International Symposium on Origin of Matter and Evolution of Galaxies (OMEG-12), November 18–22, 2013, Tsukuba, Japan.
32. Invited talk at Gamma Ray Bursts Conference, November 11–15, 2013, Yukawa Institute for Theoretical Physics, Kyoto University, Kyoto, Japan.
33. Invited talk at Tohoku Forum for Creativity – Particle Physics and Cosmology after the discovery of Higgs boson, October 21 – 25, 2014, Tohoku University, Sendai, Japan.
34. Invited talk at New Trends in High-energy Physics – 2013, September 23–29, 2014, Alushta, Crimea, Ukraine.
35. Talk at PACIFIC 2013: Particle Astrophysics and Cosmology, Including Fundamental Interactions symposium, September 2–7, 2013, Moorea, French Polynesia.
36. Invited talk at INPAC–MRPI General Meeting 2013: New Directions in Nuclear/Particle Astrophysics and Cosmology, April 26 – 28, 2013, Asilomar Conference Grounds, Monterey, CA, USA.
37. Invited talk at The AAS High Energy Astrophysics Division (HEAD) Meeting 2013, April 11–17, 2013, Monterey, CA, USA.
38. Talk at Snowbird Workshop on Dark Matter (SnowDARK – 2013), March 22–25 Snowbird, UT, USA.
39. Invited talk at Aspen Winter Conference Closing in on Dark Matter, January 28 – February 3, 2013, Aspen, CO, USA.
40. Talk at PACIFIC 2012: Particle Astrophysics and Cosmology, Including Fundamental Interactions symposium, September 1–7, 2012, Moorea, French Polynesia.
41. Talk at the 5th International Symposium on High-Energy Gamma-Ray Astronomy (Gamma- 2012), July 9–13, 2012, Heidelberg, Germany.
42. Invited talk at What is  $v$ ?, The Galileo Galilei Institute, Florence, Italy, June 24–29, 2012.
43. Invited talk at QCD at Cosmic Energies - V, June 11–15, 2012 Paris, France.
44. Invited talk at Near Infrared Background and the Epoch of Reionization workshop, Austin, Texas, May 14–15, 2012.
45. Talk at The Snowbird Workshop on TeV Interactions of Gamma rays with Extragalactic Radiation (SnowTIGER), Snowbird, UT, March 26–27, 2012.
46. Invited talk at Tenth UCLA Symposium on Dark Matter and Dark Energy, February 22–24, 2012, Marina del Rey, California
47. Invited plenary talk at First LeCosPA Symposium: Towards Ultimate Understanding of the Universe (LeCosPA2012), National Taiwan University, Taipei, Taiwan, February 6-9, 2012.
48. Invited talk at International Symposium on Future Directions in UHECR



- Physics (UHECR - 2012), CERN (Geneva), February 13-16, 2012.
49. Talk at PACIFIC 2011: Particle Astrophysics and Cosmology, Including Fundamental Interactions symposium, Moorea, French Polynesia, September 8–13, 2011.
  50. Talk at Looking at the Neutrino Sky (NUSKY) workshop, ICTP, Trieste, Italy, June 20–24, 2011
  51. Talk at SNOWPAC: Snowbird workshop on particle astrophysics, astronomy and cosmology, Jan 30 – Feb 5, 2011, Snowbird, Utah.
  52. Talk at v TheME: Neutrino Theory, Models, and Experimental perspectives workshop, September 13–22, 2010, CERN, Switzerland
  53. Talk at CRIS 2010: Cosmic Ray International Seminar, September 13–17, 2010, Catania, Palazzo dei Chierici, Italy
  54. Invited talk at Ninth UCLA Symposium on Dark Matter and Dark Energy, February 24–26, 2010, Marina del Rey, California
  55. Talk at Snowbird Particle Astrophysics and Cosmology (SnowPAC-2010), February 1–7, 2010, Snowbird, Utah, USA.
  56. Invited talk at vFlavor workshop, Cosener House, June 8 –10, 2009, Abingdon, UK
  57. Talk at Astrophysics of Neutron Stars (ASTRONS) workshop, August 31 – September 4, 2009, Istanbul, Turkey
  58. Invited talk at Gravitational-Wave Advanced Detector Workshop, May 10 – 15, 2009, Lago Mar Resort, Ft. Lauderdale, Florida, USA.
  59. Invited talk at 16th YKIS Symposium, March 9 – 13, 2009, Kyoto, Japan.
  60. Invited talk, Understanding the Dark Sector: Dark Matter and Dark Energy, Aspen Winter conference, January 25 - February 1, 2009, Aspen, Colorado, USA.
  61. Talk at Early Universe and Physics Beyond the Standard Model, December 6-8, 2008, ICRC, Kashiwa, Japan
  62. Talk at Supernova focus week, November 17-21, 2008, IPMU, Kashiwa, Japan
  63. Talk at From Quantum to Cosmos: Fundamental Physics Research in Space, July 6-10, 2008, Airlie Center, Virginia, USA.
  64. Talk at Atmospheric Monitoring for Astroparticle Physics workshop, June 25 - July 4, 2008, Prague, Czech Republic
  65. Talk at Fourth International Workshop on the Dark Side of the Universe, June 1-5, 2008, Cairo, Egypt
  66. Invited talk at Particle Physics and Cosmology (PPC-2008), May 19-23, 2008, Albuquerque, New Mexico, USA.
  67. Invited talk at International Astroparticle Physics Symposium, May 6-8, 2008, Golden, Colorado, USA.
  68. Invited talk at Neutrino focus week, March 17-21, 2008, IPMU, Kashiwa, Japan.
  69. Invited talk at Eighth UCLA Symposium on Dark Matter and Dark Energy, February 20-22, 2008, Marina del Rey, California, USA.
  70. Talk at Sixth international Heidelberg conference on dark matter in astrophysics and particle physics, September 24-28, 2007, Sydney, Australia.
  71. Invited talk at B-L International Workshop at LBNL, September 20-22, 2007
  72. Review talk at HEP-MAD 07, September 10–15, 2007, Antananarivo, Madagascar
  73. Invited talk at Astrophysical Probes Of The Nature Of Dark Matter, March 22–24, Irvine, California, USA.

74. Invited talk at Aspen Winter Conference: Neutrinos In Physics And Astrophysics, January 28 – February 3, 2007, Aspen, Colorado, USA.
75. Invited talk at Workshop on Exotic Physics with Neutrino Telescopes, September 23–27, Uppsala, Sweden
76. Invited talk at RBRC symposium RHIC Physics in the context of the Standard Model, BNL, June 18-23, 2006.
77. Invited Plenary talk at the 22nd International conference on neutrino physics and astrophysics (Neutrino 2006), Santa Fe, NM, June 13–19, 2006
78. Invited talk at the Quantum to cosmos conference Washington, DC, May 22-24, 2006
79. Talk at the International UHE neutrino workshop Beijing, China, April 24-26, 2006
80. Invited talk at 3rd International Conference on Particle And Fundamental Physics In Space (SpacePart 06), Beijing, China, April 19-21, 2006
81. Talk at the workshop on Sterile neutrinos in astrophysics and cosmology (SNAC '06), Crans Montana, Switzerland, March 24-29, 2006.
82. Invited talk at 21st Aspen Winter Conference on Particle Physics, "Particle Physics at the Verge of Discovery", Aspen, February 12-18, 2006.
83. Invited talk and concluding remarks at New Trends In High Energy Physics, September 12-17, 2005, Yalta, Ukraine
84. Invited talk at Physics and Astrophysics Of Supernova Neutrinos, Santa Fe, July 17-21, 2005.
85. Invited talk at Implications of Neutrino Flavor Oscillations (INFO 05), Santa Fe, July 11-15, 2005.
86. Talk at COSMO-04, September 17–21, 2004, Toronto, Canada
87. Talk at American Physical Society meeting of DPF, August, 2004, Riverside, CA
88. Invited talk at Frontiers of Particle Astrophysics, June 2004, Kiev, Ukraine
89. Invited talk at Non-Perturbative Quantum Chromodynamics , June 2004, Paris, France
90. Talk at 6th UCLA Symposium on Sources and Detection of Dark Matter and Dark Energy in the Universe, February, 2004, Marina del Rey, California
91. Invited Talk at Coral Gables Conference, December 2003, Ft. Lauderdale, Florida
92. Talk at 6th RESCEU International Symposium on Frontiers in Astroparticle Physics and Cosmology, November 2003, Tokyo, Japan
93. Invited talk at Neutrinos: Data, Cosmos, and Planck Scale, Kavli Institute for Theoretical Physics, UCSB, March 2003, Santa Barbara, CA
94. Talk at Aspen Winter 2003 Conference on Particle Physics: At the Frontiers of Particle Physics, January 2002, Aspen, Colorado
95. Invited talk at International Workshop on Neutrinos and Subterranean Science (NeSS-02), September 2002, Washington, D.C.
96. Talk at 32nd International Symposium On Multiparticle Dynamics (ISMD 2002), September 2002, Ukraine
97. Invited talk at Flavor Physics and CP Violation (FPCP), May 2002, Philadelphia, Pennsylvania
98. Invited talk at Very High Energy Neutrino Telescope Workshop, National Taiwan University, March 2002, Taipei, Taiwan
99. Talk at Aspen Winter Conference On Astrophysics: Ultra High Energy Particles From Space, January 2002, Aspen, Colorado
100. Invited talk at Workshop on Electromagnetic Probes of Fundamental Physics, October 2001, Erice, Sicily, Italy

101. Invited talk at International Workshop on Particle Physics and the Early Universe (COSMO-01), Rovaniemi, Finland, 30 Aug - 4 Sep 2001
102. Talk at Rencontres de Moriond: Very high energy phenomena in the universe, January 20-27, 2001, Les Arcs, France
103. Talk at 30th International Conference On High-Energy Physics (ICHEP 2000), July 27 - August 2, 2000, Osaka, Japan
104. Invited talk at 3rd International Conference On Dark Matter (Dark 2000), July 10-16 2000, Heidelberg, Germany
105. Talk at Supersymmetry-2000, June 2000, CERN, Switzerland
106. Invited talk at CERN-ESA workshop Fundamental Physics in Space, April 2000, CERN, Switzerland
107. Two invited talks at Aspen Winter Workshop On Astrophysics, February 2000, Aspen, Colorado
108. Invited plenary talk at COSMO-99, ICTP, September 1999, Trieste, Italy
109. Two talks at the Annual Meeting of the American Physical Society, Division of Particles and Fields (DPF-99), January 1999, Los Angeles, CA
110. Invited talk at the Annual UK Theory Winter Meeting, December 1998, Rutherford Appleton Laboratory, UK
111. Invited talk at the Second International Conference, on Dark Matter in Astrophysics and Particle Physics (DARK-98), July 1998, Heidelberg, Germany
112. Invited talk at the ANTARES collaboration meeting, June 1998, CERN, Switzerland
113. Talk at PASCOS-98, Northeastern University, March 1998, Boston, MA
114. Talk at SUSY-97, May 1997, University of Pennsylvania, Philadelphia, PA
115. International Symposium on Future Directions in UHECR Physics (UHECR 2012) CERN (Geneva), February 13-16, 2012
116. Talk at The origin of quark and lepton masses and mixing, October 1996, ICTP, Trieste, Italy
117. Aspen workshop on Flavor and Gauge Hierarchy, July 1996, Aspen, Colorado
118. Talk at SUSY-96, May 1996, University of Maryland, College Park, Maryland
119. Talk at Unification: From the Weak scale to the Planck scale ITP, July-December 1995, University of California, Santa Barbara, California
120. Talk at SUSY-95, May 1995, Palaiseau, France
121. Talk at PASCOS-95, March 1995, Johns Hopkins University, Baltimore, MD
122. Talk at Workshop on the Origin of Fermion Masses and Mixing, October 1994, Fermilab, Batavia, Illinois
123. Talk at SUSY-94, May 1994, University of Michigan, Ann Arbor, Michigan
124. Talk at Yukawa couplings and the origin of mass, February 1994, University of Florida, Gainesville, Florida
125. Attended Theoretical Advanced Study Institute (TASI-93), June 1993, University of Colorado at Boulder, Colorado
126. Attended SUSY-93, March 1993, Northeastern University, Boston, Massachusetts
127. Attended SLAC Summer Institute 1992, SLAC, Palo Alto, California

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## Publications

1. "New tools for analyzing quark mixing", A. Kusenko, hep-ph/9204232  
Phys. Lett. B 284, 390 (1992)
2. "A New model for fermion masses in supersymmetric grand unified theories", A. Kusenko and R. Shrock, hep-ph/9307344  
Phys. Rev. D 49, 4962 (1994)
3. "General determination of phases in quark mass matrices",  
A. Kusenko and R. Shrock, hep-ph/9310307,  
Phys. Rev. D 50, 30 (1994)
4. "General determination of phases in leptonic mass matrices", A. Kusenko  
and R. Shrock, hep-ph/9311307  
Phys. Lett. B 323, 18 (1994)
5. "Improved action method for analyzing tunneling in quantum field theory",  
A. Kusenko, hep-ph/9504418  
Phys. Lett. B 358, 51 (1995)
6. "Tunneling in quantum field theory with spontaneous symmetry breaking",  
A. Kusenko, hep-ph/9506386  
Phys. Lett. B 358, 47 (1995)
7. "Supersymmetry in the false vacuum", A. Kusenko, hep-ph/9509275  
Phys. Lett. B 377, 245 (1996)
8. "Phase transitions and vacuum tunneling into charge and color breaking  
minima in the MSSM", A. Kusenko, P. Langacker and G. Segre,  
hep-ph/9602414  
Phys. Rev. D 54, 5824 (1996)
9. "Velocities of pulsars and neutrino oscillations", A. Kusenko and G. Segre,  
hep-ph/9606428  
Phys. Rev. Lett. 77, 4872 (1996)
10. "Is the vacuum stable?", A. Kusenko and P. Langacker, hep-ph/9608340  
Phys. Lett. B 391, 29 (1997)
11. "Vacuum decay and internal symmetries", A. Kusenko, K. -M. Lee and E. J.  
Weinberg, hep-th/9609100  
Phys. Rev. D 55, 4903 (1997)
12. "Neutral current induced neutrino oscillations in a supernova",  
A. Kusenko and G. Segre, hep-ph/9701311  
Phys. Lett. B 396, 197 (1997)
13. "Solitons in the supersymmetric extensions of the standard model"  
A. Kusenko, hep-ph/9704273  
Phys. Lett. B 405, 108 (1997)
14. "Small Q balls", A. Kusenko, hep-th/9704073  
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