

Vera Gluscevic

Curriculum Vitae

1 Einstein Drive
Princeton, NJ, USA 08540
☎ +1 (609) 734 8003
☎ +1 (609) 951 4402
✉ verag@ias.edu

Research Interests

Cosmological and astrophysical probes of new physics; CMB theory and data analysis; dark matter and dark energy; direct detection of dark matter; cosmic reionization; 21-cm cosmology.

Professional Experience

2013–Present **Institute for Advanced Study, Princeton, NJ, USA.**

- Member

Education and Research Experience

2007–2013 **California Institute of Technology, Pasadena, CA, USA.**

- Ph.D. in Astrophysics (June 2013)
 - Thesis: *CMB as a Probe of New Physics and Old Times*
 - Adviser: Prof. Marc Kamionkowski
- M.S. in Astrophysics (June 2009)

2003–2007 **University of Belgrade, Department of Astrophysics, Belgrade, Serbia.**

- B.S. in Astrophysics (*summa cum laude*, Student of the Generation)

Summer 2006 **Space Telescope Science Institute, Baltimore, MD, USA.**

- Research Assistantship
 - Project: Multiwavelength aperture photometry of HII regions in nearby galaxies with Spitzer and HST to calibrate reddening-extinction correlation.
 - Adviser: Prof. Daniela Calzetti

1999–2003 **X Belgrade High School, Belgrade, Serbia.**

- Graduation thesis: *Influence of the Galaxy on Mass Extinctions*
- Adviser: Prof. Milan Cirkovic

Diversity and Outreach

2015-present IAS Diversity Committee (Focus: Establishment of the first IAS parental leave, disability, and adoption leave policy)

December 2014 Princeton Amateur Astronomer's Association, (AAAP), public talk: *How do You "Catch" Dark Matter?*

August 2013 Public lecture, Belgrade Planetarium, Serbia: *Glow of the past: Story of the CMB (Sjaj prošlosti: Prica o mikrotalasnoj kosmičkoj pozadini).*

Spring 2012 "The 2012 Venus Transit at Caltech" public outreach program: volunteer.

- Summer 2009 “Letenka” astronomy summer camp, Fruska Gora, Serbia: Consultation session for Serbian undergraduates interested in studying abroad.
- 2003-Present Magazine “Astronomija” for popularization of Astronomy and Science, Novi Sad, Serbia: columnist and foreign correspondent.
- 2001-2003 Belgrade Public Observatory and Planetarium, Serbia: junior assistant.

Teaching and Mentoring

- 2008-2011 **Teaching Assistant**, *California Institute of Technology, Pasadena, CA, USA.*
- Ay101: *Physics of Stars*, Fall 2008, Prof. L. Hillenbrand
 - Prepared solutions, held office hours, graded problem sets.
 - Ay21: *Galaxies and Cosmology*, Winter 2008, Prof. C. Steidel
 - Held office hours, graded problem sets, organized material reviews.
 - Ay1: *The Evolving Universe*, Spring 2009, Prof. N. Scoville
 - Section Instructor: *Astrobiology*.
 - Ph1: *Introductory Course in Newtonian Mechanics*, Fall 2009, Prof. J. Zmuidzinas
 - Graded problem sets and quizzes.
 - Ph1: *Introductory Course in Newtonian Mechanics*, Fall 2010, Prof. J. Zmuidzinas
 - Section instructor.
- Summer 2010 **Summer course on “Forces and Rocketry”**, *Wilson Middle School in Pasadena.*
- Instructor.
- Summer 2010 **Summer Undergraduate Research Fellowship (SURF) Program**, *California Institute of Technology.*
- Co-advised a summer student: Jason Sanders.
 - Research project: *Measuring Cosmic Birefringence with Active Galactic Nuclei.*
- 2011-2013 **Astronomy peer mentoring program**, *California Institute of Technology.*
- Mentored junior grad students: Melodie Kao, Io Kleiser.
- August 2014 **Undergraduate Summer Research Program (USRP)**, *Department of Astrophysical Sciences, Princeton University.*
- lecturer: *Direct detection of dark matter.*
- Summer 2015 **Undergraduate Summer Research Program (USRP)**, *Department of Astrophysical Sciences, Princeton University.*
- Advised an undergraduate student Katelyn Neese (project: *Can Annual Modulation Signals Help Distinguish Dark-Matter Theories?*).
- June 2015 **Undergraduate Summer Research Program (USRP)**, *Department of Astrophysical Sciences, Princeton University.*
- lecturer: *Dark matter.*
- Fall 2015 **Astrophysics Majors, Junior Paper Project**, *Princeton University.*
- Advising an undergraduate student Katelyn Neese (project: *Simulating Annual Modulation Signal in Dark Matter Direct Detection Experiments.*).

Honors and Awards

- 2008 Van Maanen Fellowship, California Institute of Technology, Pasadena.
- 2007 Astrophysics Department, University of Belgrade, Serbia: “Prof. Zaharije Brkic” Award for the “Student of the Generation” in graduating class of 2006/2007.
- 2006 Ministry of Education Serbia and Eurobank EFG: One-term stipend for Serbian students majoring in science with current GPA equivalent greater than 3.92/4.00.
- 2005 Faculty for Mathematics, University of Belgrade, Serbia: Annual award for excellence in studies.
- 2004 Faculty for Mathematics, University of Belgrade, Serbia: Annual award for excellence in studies.

Meeting Organization and Professional Service

- 2014-2015 Institute for Advanced Study Astrophysics Informal Seminar, organizer.
- 2012-2013 Founder and mediator of the “CMB Tea” bi-weekly meeting for Caltech students and postdocs working on CMB theory and experiments.
- 2013-present Journal Referee: Physical Review D, Physical Review Letters, Journal of Cosmology and Astroparticle Physics

Computer skills

Proficient in Python, Cython, C, Mathematica, MATLAB, SuperMongo, and GnuPlot. Experience with Bayesian posterior sampler MultiNest, and cosmological packages HEALPix, CAMB, 21CMFast, CosmoMC.

Conferences, Workshops, and Talks

- Mar. 2016 Collaboration Workshop: Cosmology with CMB-S4, LBNL, Berkeley, CA, USA.
- Feb. 2016 Dark Matter 2016, UCLA, CA, USA; Talk: *Can We Identify the Theory of Dark Matter with Direct Detection?*
- Dec. 2015 Perimeter Institute for Theoretical Physics, Gravity and Cosmology Seminar, Waterloo, ON, Canada; Invited talk: *Can We Identify the Theory of Dark Matter with Direct Detection?*
- Oct. 2015 Joint Stony Brook/Brookhaven National Lab Cosmology Seminar, Stony Brook, NY, USA; Invited talk: *Can We Identify the Theory of Dark Matter with Direct Detection?*
- Sep. 2015 Collaboration Workshop: Cosmology with CMB-S4, University of Michigan, Ann Arbor, IL, USA.
- Sep. 2015 Special Cosmology Group Seminar, University of Michigan, Ann Arbor, IL, USA; Invited talk: *Identifying the Theory of Dark Matter with Direct Detection*
- Sep. 2015 High Energy Physics Seminar, Pennsylvania State University, State College, PA, USA; Invited talk: *Identifying the Theory of Dark Matter with Direct Detection*

- Aug. 2015 High Energy Physics Seminar, University of Hawaii, Honolulu, HI, USA; Talk: *Identifying the Theory of Dark Matter with Direct Detection*
- May 2015 Conference on the Intersections of Particle and Nuclear Physics (CIPANP), Vail, CO, USA; Invited talk: *Probing Theories of Dark Matter with Direct Detection: A Census Study*
- Apr. 2015 Astrophysics Seminar, Carnegie Mellon University, Pittsburgh, PA, USA; Invited talk: *What we Can(not) Learn from Dark Matter Direct Detection*
- Sep. 2014 MIAPP workshop: Cosmology after Planck, Garching, Germany; Talk: *A new Method for Probing Primordial Magnetic Fields at High Redshifts.*
- Aug. 2014 COSMO-2014, Chicago, IL, USA; Talk: *Prospects for Understanding Dark Matter-Baryon Interactions with Direct Detection.*
- Mar. 2014 IAS Informal Seminar, Princeton, NJ, USA; Talk: *What We Can(not) Learn from Dark Matter Direct Detection.*
- Mar. 2014 The Eighth Harvard-Smithsonian Conference on Theoretical Astrophysics: Debates on the Nature of Dark Matter, Cambridge, MA, USA; Poster: *Understanding Dark Matter-Baryon Interactions with Direct Detection.*
- Sep. 2013 The Dark Matter Paradigm: Current Status and Challenges, PCTS workshop, Princeton, NJ, USA
- Jul. 2013 CASS special seminar, UCSD, San Diego, CA; Invited talk: *Understanding Dark Matter-Baryon Interactions with Direct Detection.*
- Jan. 2013 AAS 221th Meeting, Long Beach, CA, USA; Talk: *Testing New Physics with the Cosmic Microwave Background.*
- Nov. 2012 Joint IAS/PU Cosmology lunch, Princeton, NJ; Invited talk: *CMB as a Probe of New Physics: The Story of Cosmic Birefringence.*
- Nov. 2012 Dartmouth astronomy seminar, Dartmouth, NH; Invited talk: *CMB as a Probe of New Physics: The Story of Cosmic Birefringence.*
- Nov. 2012 CfA/ITC seminar, Cambridge, MA; Talk: *CMB as a Probe of New Physics: The Story of Cosmic Birefringence.*
- Oct. 2012 KICP Seminar at the University of Chicago, Chicago, IL; Invited talk: *CMB as a Probe of New Physics: The Story of Cosmic Birefringence.*
- Oct. 2012 HEP/Astrophysics Seminar at the University of Michigan Physics Department, Ann Arbor, MI; Invited talk: *CMB as a Probe of New Physics: The Story of Cosmic Birefringence.*
- Sep. 2012 CASS Seminar at the University of California, San Diego, CA; Invited talk: *CMB as a Probe of New and Old Physics.*
- Jun. 2012 Workshop “CMB Polarization Cosmology in the Coming Decade” at the Keck Institute for Space Studies, California Institute of Technology, Pasadena, CA.

- Jan.-Feb. 2012 Winter Conference on Astrophysics, “Inflationary Theory and its Confrontation with Data in the Planck Era” at the Aspen Center for Physics, Aspen, CO; Talk: *Cosmological Birefringence: First Constraints on the Rotation-Angle Power Spectrum*.
- Jul. 2011 Prospects in Theoretical Physics (PiTP) Program, “Frontiers of Physics in Cosmology” at the Institute for Advanced Study in Princeton, NJ, USA.
- Jul. 2010 Summer School in Cosmology at Abdus Salam International Centre for Theoretical Physics, Trieste, Italy; Talk: *Testing Parity-Violating Mechanisms with CMB Experiments*.
- Feb. 2010 Winter Conference on Astrophysics, “The High Redshift Universe: A Multi-Wavelength View” at the Aspen Center for Physics, Aspen, CO, USA.
- Jan. 2010 AAS 215th Meeting, Washington DC, USA; Poster: *Testing Parity-Violating Interactions with CMB Experiments*.
- Oct. 2009 9th Annual Theoretical Astrophysics in Southern California (TASC) Meeting at the University of Southern California, CA, USA; Talk: *Testing Parity-Violating Interactions with the CMB*.
- Jun.-Jul. 2009 Summer School: “Exploring the Cosmological Frontiers” at the Perimeter Institute, Waterloo, Canada.
- Feb.-Mar. 2007 Split International Winter School (SIWA 2007) on Astrobiology and Exoplanets, Split, Croatia.
- Aug. 2006 Summer Internship Program Meeting at the Space Telescope Science Institute, Baltimore, MD, USA; Talk: *Unveiling Properties of the Star-Forming ISM in NGC7793*.

References

- Prof. Marc Kamionkowski (kamion@pha.jhu.edu)
 Prof. David Spergel (dns@astro.princeton.edu)
 Prof. Annika Peter (peter.33@osu.edu)
 Prof. Christopher Hirata (hirata.10@osu.edu)
 Prof. Robert Caldwell (robert.r.caldwell@dartmouth.edu)