

Vera Gluscevic

Curriculum Vitae (February 2023)

University of Southern California
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Research Interests

Cosmological and astrophysical probes of new physics; dark matter and dark energy; direct detection; cosmic microwave background theory and analysis; near-field cosmology; 21-cm cosmology; structure formation; cosmological simulations; probabilistic inference in physics.

Appointments

- 2023 **California Institute of Technology, Physics, Mathematics and Astronomy, Pasadena, CA**
 - Visiting Associate in Theoretical Astrophysics
- 2019–Present **University of Southern California, Department of Physics and Astronomy, Los Angeles, CA**
 - Gabilan Assistant Professor
- 2018–2019 **Princeton University, Department of Physics, Princeton, NJ**
 - Visiting Research Scholar, Department of Physics.
 - University of Florida, Department of Physics, Assistant professor, on leave.
- 2013–2018 **Institute for Advanced Study, Princeton, NJ**
 - Postdoctoral Member; Eric Schmidt Fellow (2016-2018)
 - Maternity leave (summer 2013; spring 2017)

Education

- June 2013 **Ph.D. in Astrophysics, California Institute of Technology, Pasadena, CA**
 - Thesis: *CMB as a Probe of New Physics and Old Times*.
 - Adviser: Prof. Marc Kamionkowski.
- June 2007 **B.S. in Astrophysics, University of Belgrade, Belgrade, Serbia**
 - Award “Prof. Zaharije Brkic” (for the best student in class of 2007).
 - Faculty for Mathematics Award for Excellence in Studies (2004; 2005).
 - Serbian Ministry of Education and Faculty for Mathematics Excellence Award (2006).

Honors and Fellowships

- 2023 **Cottrell Scholars Award**, Research Corporation for Science Advancement.
- 2022 **Albert S. Raubenheimer Outstanding Junior Faculty Award**, University of Southern California.
- 2022 **Nomination for the Packard Fellowship**, University of Southern California.

- 2019 **Gabilan Assistant Professorship**, University of Southern California.
- 2016-2018 **Eric Schmidt Fellowship**, Institute for Advanced Study.
- 2007 **Zaharije Brkic Student of the Generation Award**, University of Belgrade.
- 2006 **Excellence in Undergraduate Studies Award**, Serbian Ministry of Education.
- 2004, 2005 **Excellence in Studies Award**, Faculty for Mathematics, University of Belgrade.

External funding

- **NSF–Particle Astrophysics and Cosmology–Theory**. Award number: PHY-2013951. Award period: 09/2020-08/2023. **\$225,000 (single PI)**. Title: “Probing Dark Matter Physics Throughout Cosmic History.”
- **NASA Astrophysics Theory Program**. Award number: 21-ATP21-0135. Award period: 06/2022-07/2025. **\$545,084 (lead PI)**. Title: “Cosmological Signals of Light Dark Matter: New Predictions and Connections.”
- **Cottrell Scholars Award**. Award period: 2023-2026. **\$100,000**. Title: “Discovering Dark Matter with Cosmology.”
- **USC Annenberg-Weingarten Cosmology Fund**. \$25,000 from the Annenberg-Weingarten Foundation and explore.org for USC Cosmology Colloquium and Visitor series.

Leadership and Service

- 2022 **USC Annenberg-Weingarten Cosmology Fund**
 - Raised \$25,000 from the Annenberg-Weingarten Foundation and explore.org for USC Cosmology Colloquium and Visitor series.
- 2022 **KITP Long-Term Program Lead (Summer 2024)**
 - Topic: Dark Matter Theory, Simulation, and Analysis in the Era of Large Surveys.
 - Lead of the proposal and head organizer of an accepted 2-month program.
 - <https://www.kitp.ucsb.edu/activities/darkmatter24>
 - Estimated funds \$115,000.
- 2021–Present **NASA PhysPAG Executive Committee**
 - NASA Physics of the Cosmos Program Analysis Group (PhysPAG) elected member of the Executive Committee and Co-chair of the Cosmic Structures Science Interest group.
- 2021–Present **USC Physics and Astronomy Climate Committee**
 - Founder and inaugural chair.
- 2021–Present **USC Physics and Astronomy Faculty Liaison for Graduate Students**.
- 2018–Present **Simons Observatory Collaboration**
 - Founding member, helped formulate science goals and design of the original experiment.
 - USC Institutional Point-of-Contact (2022–Present)
 - Analysis pipeline development co-lead (2018–2020)
 - Likelihood and Theory working group co-lead (2018–2020)

- 2018–Present **CMB-S4 Collaboration**
- Founding member for the proposed next-generation ground-based CMB experiment.
 - Member of the Science Council (2018-2020)
 - Lead of the Dark Matter working group (2018-2020)
 - Member of the Membership Committee (2022-Present)
- 2021 **Snowmass21**, *particle physics community planning process*
- Principal author of a Letter of Interest “Cosmic Probes of Dark Matter Interactions: Challenges for Theory and Analysis”, submitted to Snowmass Cosmic Frontiers working group, August 2020.
 - CF3 Topical Group Report Co-author “Cosmic Probes of Dark Matter.”
- 2019 **Astro2020 Decadal Survey**, *community input coordination*
- **Principal author of science white paper** “Cosmological Probes of Dark Matter Interactions: The Next Decade”, submitted to the National Academies, March 2019 [ArXiv:1903.05140].
 - Key contributor to four science white papers, submitted to the National Academies, March 2019. (https://sites.nationalacademies.org/SSB/CurrentProjects/SSB_185159)
 - Key contributor to three project white papers (Simons Observatory, CMB-S4, PICO).
- 2022 **DOE Office of Science Graduate Student Research (SCGSR) Program**
- Proposal Review.
- 2019–2020 **USC Diversity, Equity, and Inclusion Caucus.**
- 2016, 2020, 2022 **NSF grant proposal review (Astrophysics and Astro-Particle and Cosmology Programs, panelist.**
- 2020, 2023 **NASA grant proposal review.**
- 2015–2018 **IAS Committee on Diversity**
- Invited postdoctoral representative.
 - Helped formulate and establish IAS Parental Leave Policy.
- 2013–Present **Journal referee:** Physical Review D, Physical Review Letters, Journal of Cosmology and Astroparticle Physics.

Teaching

- Summer 2023 **Michigan Cosmology Summer School 2023**, Ann Arbor, Michigan.
- Fall 2022 **Advanced Cosmology (ASTR 540)**, *Graduate course*, Department of Physics and Astronomy, USC, CA.
- Spring 2021, Fall 2021, Spring 2022 **The Universe (ASTR 100)**, *General Education Course*, Department of Physics and Astronomy, USC, CA.
- Spring 2020 **Cosmology (ASTR 424)**, *Upper-division course for physics and astronomy majors*, Department of Physics and Astronomy, USC, CA.
- Spring 2021 **International School of Astroparticle Physics (ISAPP)**, *DARK MATTER: From theory to detection*, Vienna, Austria.

- 2020, 2021 **Physics Capstone Project (PHYS 495)**, *Senior project for physics/computer science majors*, Department of Physics and Astronomy, USC, CA.
- Summer 2010 **Forces and Rocketry**, *Summer course*, Wilson Middle School, Pasadena, CA.
- 2008-2011 **Teaching assistant**, *California Institute of Technology*
- Ay101: *Physics of Stars*, Fall 2008, Prof. L. Hillenbrand.
 - Ay21: *Galaxies and Cosmology*, Winter 2008, Prof. C. Steidel.
 - Ay1: *The Evolving Universe*, Spring 2009, Prof. N. Scoville.
 - Section Instructor: *Astrobiology*.
 - Ph1: *Introductory Course in Newtonian Mechanics*, Fall 2010, Prof. J. Zmuidzinas.
 - Section instructor.

Mentoring

- 2020–Present **Postdoctoral adviser**
- Dr. Rui An
 - Dr. Ethan Nadler
- 2019–Present **Ph.D. thesis adviser**
- George (Trey) Driskell (passed PhD candidacy 2023)
 - Aryan Rahimieh
 - Wendy Crumrine
 - Adam He
 - Karime Maamari
- 2019–Present **Undergraduate student project advisor**
- Julie Xue (USC, class of 2023; USC Physics and Astronomy PhD program 2023), Resherle Verna (USC, GEM fellowship, class of 2020; UT Austin Astronomy PhD program 2022), Israel Biniam (Montgomery College, NSBP-Simons Summer Program 2022; USC Data Science Masters program 2023), James Wen (USC, class of 2024), Karime Maamari (USC, class of 2020), Dimple Sarnaaik (USC, class of 2021; USC Physics and Astronomy PhD program 2022), David Nguyen (USC, class of 2021; Yale Physics PhD program 2021), Brenda Zhou (USC, class of 2021), Christian Glover (USC, class of 2020), Connor Powers (USC, class of 2021), Francisco Silva Pavon (USC, class of 2021, capstone project), Praayas Aggarwal (USC, class of 2021, capstone project), Arjun Bamba (USC, class of 2022, capstone project), Shuxing Fang (USC, class of 2022, capstone project), Nyal McCrea (Central Washington University, NSBP-Simons Summer Program 2021)
- 2016-2020 **External project advisor (graduate students)**
- Jack Lashner (USC, 2020), Ethan Nadler (Stanford, 2019), Zack Li (Princeton, 2017/18), Samuel Witte (UCLA, 2016).
- 2021–Present **Student Committees**
- Jack Lashner (Thesis Committee 2022), Armen Tokadjian (Candidacy Committee 2021), Anastasia Haynie (Candidacy Committee 2021), Jason Williams (Thesis Committee 2023).
- Summer **Undergraduate Summer Research Program (USRP)**, *Department of Astrophysical Sciences, Princeton University*, Student Project Adviser
- 2015-2018
- Aizhan Akhmetzhanova (*Non-linearities in interacting cosmologies*; Summer/Fall 2018.)
 - Emery Trott (*CMB-S4 sensitivity to dark matter interactions*; Summer 2017.)
 - Katelyn Neese (*Annual modulation as a model-selection tool*; Summer/Fall 2015.)

- 2011-2013 **Astronomy peer mentoring program**, *California Institute of Technology*
 - Mentored junior grad students: Melodie Kao, Io Kleiser.
- Summer 2010 **Summer Undergraduate Research Fellowship (SURF) Program**, *California Institute of Technology*
 - Co-advised student: Jason Sanders (*Constraining cosmic birefringence with AGN.*)

Organization

- May–Jul 2024 *Dark Matter Theory, Simulation, and Analysis in the Era of Large Surveys*: KITP Long-Term Program, Lead organizer.
- Nov. 2022 *New Physics from Galaxy Clustering*, Theory Institute at CERN, co-organizer.
- 2021–Present USC Astrophysics Seminar, co-organizer.
- 2019–Present USC Women in Physics, founder.
- 2019–Present USC CosmoLab, founder and organizer.
- Aug. 2021 COSMO21 conference (online), invited co-convener.
- 2019–2020 USC Physics and Astronomy Colloquium, organizer.
- Aug. 2019 COSMO19 conference in Aachen, Germany, invited co-convener.
- Jun 2019 AAS meeting-in-a-meeting on Dark Matter, St. Louis, MO, organizer.
- 2014-2015 IAS Informal Seminar, organizer.
- 2012-2013 “CMB Tea” meetings for Caltech Cosmology Group, founder and organizer.

Outreach

- December 2021 USC Dornsife Magazine: A Cosmic Conversation, Interview.
- January 2021 Nature and Nurture Podcast (previously Res Cogitans), Interview.
- February 2020 Society of Physics Students, USC Chapter, Speaker.
- December 2019 Students for the Exploration and Development of Space (SEDS), USC Chapter, Speaker (talk: *The cosmological hunt for dark matter*).
- June 2020 Physics Festival at USC, Panelist
- March 2018 IAS After Hours Conversations, talk: *Did we discover evidence for dark matter collisions at the dawn of first stars?*
- October 2016 Lunch with a Member, talk for the Friends of the IAS: *Cosmic microwave background: a cosmologist’s discovery tool.*
- March 2016 IAS After Hours Conversations, talk: *What is dark matter?*
- September 2015 IAS Staff Welcome Reception, presentation on current research.
- 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: Invited consultation session for Serbian undergraduates interested in studying abroad.
- 2003-2013 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.

Invited Talks and Workshops (since 2019)

- May 2023 2023 Mitchell Conference on Collider, Dark Matter, and Neutrino Physics; George P. and Cynthia Woods Mitchell Institute for Fundamental Physics and Astronomy, Texas A&M University, TX; invited speaker.
- Mar 2023 UCLA Dark Matter 2023 conference, invited plenary speaker.
- Mar 2023 Simons Center Program on BSM physics – Lighting new Lampposts for Dark Matter and Beyond the Standard Model, Stony Brook, NY; invited workshop participant.
- Mar 2023 The Less Travelled Path to the Dark Universe, International Centre for Theoretical Sciences (ICTS), Bangalore, India; remote talk.
- Nov 2022 Workshop on Primordial Physics with Spectroscopic Surveys, UC San Diego, invited participant.
- Oct 2022 Carnegie Observatories Colloquium, Pasadena, CA, invited speaker.
- Jun 2022 SYNCRETISM 2022 Symposium: Particle physicists dining with Astrophysicists, Crete, Greece, invited speaker.
- Apr. 2022 Workshop on Novel Hidden Sectors: From Colliders to Cosmology, Garching, Germany, invited participant.
- Oct. 2021 Racontres the Blois Conference, France, invited plenary talk, turned down invitation due to COVID-19 travel restrictions.
- Oct. 2021 Perimeter Institute Astrophysics Seminar (via zoom); Title: *Dark matter interactions throughout cosmic history.*
- Aug. 2021 Summer workshop on Dark Matter, Aspen, invited participant.
- Jul. 2021 International School of Astroparticle Physics (ISAPP) "DARK MATTER: from theory to detection," Vienna, Austria (via zoom); Title: *Dark matter cosmology.*
- May 2021 XIV International Conference on Interconnections between Particle Physics and Cosmology (via zoom); Title: *Dark matter interactions.*
- May 2021 TRIUMF Astrophysics Seminar (via zoom); Title: *Dark matter interactions.*
- Apr. 2021 DKM LSST, Vera Rubin Observatory dark matter meeting (via zoom); Title: *Dark matter interactions.*

- Mar. 2021 OKC Colloquium, Stockholm (via zoom); Title: *Dark matter throughout cosmic history.*
- Mar. 2021 Astronomy Colloquium, UC Riverside (via zoom); Title: *Dark matter throughout cosmic history.*
- Dec. 2020 Astronomy Seminar, UC Davis (via zoom); Title: *Dark matter interactions throughout cosmic history.*
- Nov. 2020 Cal State LA, Astronomy Colloquium (via zoom); Title: *Dark matter interactions throughout cosmic history.*
- Oct. 2020 Workshop on Global 21-cm signal, invited plenary talk, Cambridge, UK (via zoom); Title: *Dark matter interactions throughout cosmic history.*
- Oct. 2020 XIX Serbian Astronomy Conference, plenary talk; Title: *Dark matter interactions throughout cosmic history.*
- Oct. 2020 Caltech/JPL Cosmology Seminar; Title: *Dark matter interactions.*
- Aug. 2020 Cosmology Seminar, Fermilab; Title: *Dark matter interactions.*
- Jul. 2020 Invited follow-on visit, KITP, Santa Barbara (cancelled due to COVID); Title: *Millicharged dark matter on small scales.*
- Jun. 2020 News from the Dark, Workshop (by invitation), Strasbourg, France (via Zoom, due to COVID); Title: *Dark matter interactions throughout cosmic history.*
- May 2020 Invited plenary talk, 32nd Rencontres de Blois - Particle Physics and Cosmology Conference, Chateau de Blois, France (cancelled due to COVID); Title: *Astrophysical Probes of Dark Matter.*
- Mar. 2020 UCLA Dark Matter 2020 conference (cancelled due to COVID); Title: *Astrophysical probes of dark matter.*
- Mar. 2020 Cosmology/Astrophysics Seminar, South Methodist University (via Zoom, due to COVID); Title: *Dark matter throughout cosmic history.*
- Mar. 2020 Invited participant, Lighting new Lampposts for Dark Matter and Beyond the Standard Model, Simons Center Program (cancelled trip due to COVID)
- Feb. 2020 Colloquium, Mitchell Institute, Texas A&M University; Title: *Dark matter throughout cosmic history.*
- Feb. 2020 Theory Thursday, Carnegie Observatories, Pasadena; Title: *Satellites as probes of dark matter.*
- Dec. 2019 KITP Seminar, UCSB; Title: *Dark matter throughout cosmic history.*
- Nov. 2019 Astronomy Colloquium, UCLA; Title: *Dark matter throughout cosmic history.*
- Oct. 2019 2nd Global 21-cm signal, Workshop, McGill University; Title: *Dark matter throughout cosmic history.*
- Oct. 2019 Working group lead status report, CMB-S4 collaboration meeting; Title: *Dark Universe.*

- Aug. 2019 LSST Dark Matter Workshop, University of Chicago; Title: *Cosmological probes of dark matter interactions*.
- Jun. 2019 New Directions in the Search for Light Dark Matter Particles, Conference, Fermilab; Title: *Cosmological probes of dark matter interactions*.
- Jan. 2019 Dunlap Institute Colloquium, University of Toronto; Title: *Dark matter throughout cosmic history*.

Peer-reviewed Publications

*Junior advisees (students or postdocs) are indicated by an asterisk.

- Rui, A.*, **Gluscevic, V.**, Nadler, E. O.*, Zhang, Y. Can Neutrino Self-interactions Save Sterile Neutrino Dark Matter? arxiv:2301.08299. Submitted to PRL.
- He, A.*, Ivanov, M., Rui, A.*, **Gluscevic, V.** S8 Tension in the Context of Dark Matter-Baryon Scattering. arxiv: 2301.08260. Submitted to PRL.
- Nadler, E. O.*, Benson, A., Driskell, T. *, Du, X., **Gluscevic, V.**. Growing the First Galaxies' Merger Trees. arxiv:2212.08584. Submitted to PRD.
- Driskell, T. *, Nadler, E. O.*, Mirocha, J. *, Benson, A., Boddy, K. K., Morton, T. D., Lashner, J. *, Rui, A.*, **Gluscevic, V.**. Structure Formation and the Global 21-cm Signal in the Presence of Coulomb-like Dark Matter-Baryon Interactions. Physical Review D 106. doi:10.1103/PhysRevD.106.103525
- Li, Z. *, An, R. *, **Gluscevic, V.**, Boddy, K. K., ACT Collaboration. Submitted to Physical Review D. The Atacama Cosmology Telescope: limits on dark matter-baryon interactions from DR4 power spectra. arXiv:2208.08985; submitted to Physical Review D
- Roy, A., van Engelen, A., **Gluscevic, V.**, Battaglia, N. Probing the circumgalactic medium with CMB polarization statistical anisotropy. arXiv:2201.05076; submitted to Physical Review D
- Short, K., Bernal, J. L., Boddy, K. K., **Gluscevic, V.**, Verde, L. 2022. Dark matter-baryon scattering effects on temperature perturbations and implications for cosmic dawn. arXiv:2203.16524; submitted to the Journal of Cosmology and Astroparticle Physics
- Rui, A. *, **Gluscevic, V.**, Erminia, C., Colin, H. J. 2022. What does cosmology tell us about the mass of thermal-relic dark matter? accepted Journal of Cosmology and Astroparticle Physics. arXiv:2202.03515
- Nguyen, D. V. *, Sarnaik, D. *, Boddy, K. K., Nadler, E. O. *, **Gluscevic, V.** 2021. Observational constraints on dark matter scattering with electrons. Physical Review D 104. doi:10.1103/PhysRevD.104.103521
- Nadler, E. O. * and 68 colleagues (DES Collaboration) including **Gluscevic, V.** as external key contributor 2021. Constraints on Dark Matter Properties from Observations of Milky Way Satellite Galaxies. Physical Review Letters 126. doi:10.1103/PhysRevLett.126.091101
- Maamari, K. *, **Gluscevic, V.**, Boddy, K. K., Nadler, E. O. *, Wechsler, R. H. 2021. Bounds on Velocity-dependent Dark Matter-Proton Scattering from Milky Way Satellite Abundance. The Astrophysical Journal Letters 907. doi:10.3847/2041-8213/abd807
- Nadler, E. O. *, **Gluscevic, V.**, Boddy, K. K., Wechsler, R. H. 2019. Constraints on Dark Matter Microphysics from the Milky Way Satellite Population. The Astrophysical Journal Letters 878. doi:10.3847/2041-8213/ab1eb2

- Li, Z.^{*}, **Gluscevic, V.**, Boddy, K. K., Madhavacheril, M. S. 2018. Disentangling dark physics with cosmic microwave background experiments. *Physical Review D* 98. doi:10.1103/PhysRevD.98.123524
- Boddy, K. K., **Gluscevic, V.**, Poulin, V., Kovetz, E. D., Kamionkowski, M., Barkana, R. 2018. Critical assessment of CMB limits on dark matter-baryon scattering: New treatment of the relative bulk velocity. *Physical Review D* 98. doi:10.1103/PhysRevD.98.123506
- Kovetz, E. D., Poulin, V., **Gluscevic, V.**, Boddy, K. K., Barkana, R., Kamionkowski, M. 2018. Tighter limits on dark matter explanations of the anomalous EDGES 21 cm signal. *Physical Review D* 98. doi:10.1103/PhysRevD.98.103529
- Boddy, K. K., **Gluscevic, V.** 2018. First cosmological constraint on the effective theory of dark matter-proton interactions. *Physical Review D* 98. doi:10.1103/PhysRevD.98.083510
- **Gluscevic, V.**, Boddy, K. K. 2018. Constraints on Scattering of keV-TeV Dark Matter with Protons in the Early Universe. *Physical Review Letters* 121. doi:10.1103/PhysRevLett.121.081301
- **Gluscevic, V.**, Venumadhav, T., Fang, X., Hirata, C., Oklopčić, A., Mishra, A. 2017. New probe of magnetic fields in the pre-reionization epoch. II. Detectability. *Physical Review D* 95. doi:10.1103/PhysRevD.95.083011
- Venumadhav, T., Oklopčić, A., **Gluscevic, V.**, Mishra, A., Hirata, C. M. 2017. New probe of magnetic fields in the preionization epoch. I. Formalism. *Physical Review D* 95. doi:10.1103/PhysRevD.95.083010
- Witte, S. J.^{*}, **Gluscevic, V.**, McDermott, S. D. 2017. Prospects for distinguishing dark matter models using annual modulation. *Journal of Cosmology and Astroparticle Physics* 2017. doi:10.1088/1475-7516/2017/02/044
- **Gluscevic, V.**, Gresham, M. I., McDermott, S. D., Peter, A. H. G., Zurek, K. M. 2015. Identifying the theory of dark matter with direct detection. *Journal of Cosmology and Astroparticle Physics* 2015. doi:10.1088/1475-7516/2015/12/057
- Peter, A. H. G., **Gluscevic, V.**, Green, A. M., Kavanagh, B. J., Lee, S. K. 2014. WIMP physics with ensembles of direct-detection experiments. *Physics of the Dark Universe* 5, 45–74. doi:10.1016/j.dark.2014.10.006
- **Gluscevic, V.**, Peter, A. H. G. 2014. Understanding WIMP-baryon interactions with direct detection: a roadmap. *Journal of Cosmology and Astroparticle Physics* 2014. doi:10.1088/1475-7516/2014/09/040
- **Gluscevic, V.**, Kamionkowski, M., Hanson, D. 2013. Patchy screening of the cosmic microwave background by inhomogeneous reionization. *Physical Review D* 87. doi:10.1103/PhysRevD.87.047303
- **Gluscevic, V.** 2013. CMB as a Probe of New Physics and Old Times. Ph.D. Thesis.
- **Gluscevic, V.**, Hanson, D., Kamionkowski, M., Hirata, C. M. 2012. First CMB constraints on direction-dependent cosmological birefringence from WMAP-7. *Physical Review D* 86. doi:10.1103/PhysRevD.86.103529
- Caldwell, R. R., **Gluscevic, V.**, Kamionkowski, M. 2011. Cross-correlation of cosmological birefringence with CMB temperature. *Physical Review D* 84. doi:10.1103/PhysRevD.84.043504
- **Gluscevic, V.**, Barkana, R. 2010. Statistics of 21-cm fluctuations in cosmic reionization simulations: PDFs and difference PDFs. *Monthly Notices of the Royal Astronomical Society* 408, 2373–2380. doi:10.1111/j.1365-2966.2010.17293.x

- **Gluscevic, V.**, Kamionkowski, M. 2010. Testing parity-violating mechanisms with cosmic microwave background experiments. *Physical Review D* 81. doi:10.1103/PhysRevD.81.123529
- **Gluscevic, V.**, Kamionkowski, M., Cooray, A. 2009. Derotation of the cosmic microwave background polarization: Full-sky formalism. *Physical Review D* 80. doi:10.1103/PhysRevD.80.023510

Large-Collaboration Publications

Below are listed peer-reviewed publications to which V. Gluscevic made minor contributions as a member of a large collaboration.

- Drlica-Wagner, A. and 40 colleagues, including **Gluscevic, V.** 2021. Report of the Topical Group on Cosmic Probes of Dark Matter for Snowmass 2021. arXiv:2209.08215
- Kreisch, C. and 23 colleagues et al., including **Gluscevic, V.** 2022. The Atacama Cosmology Telescope: The Persistence of Neutrino Self-Interaction in Cosmological Measurements arXiv:2207.03164
- Hill, J. C. and 41 colleagues (ACT Collaboration) including **Gluscevic, V.** 2021. The Atacama Cosmology Telescope: Constraints on Pre-Recombination Early Dark Energy. arXiv:2109.04451; submitted to PRD
- Li, Y. and 32 colleagues (ACT Collaboration) including **Gluscevic, V.** 2021. Constraining Cosmic Microwave Background Temperature Evolution With Sunyaev-Zel'Dovich Galaxy Clusters from the Atacama Cosmology Telescope. *The Astrophysical Journal* 922. doi:10.3847/1538-4357/ac26b6
- Aiola, S. and 140 colleagues (ACT Collaboration) including **Gluscevic, V.** 2020. The Atacama Cosmology Telescope: DR4 maps and cosmological parameters. *Journal of Cosmology and Astroparticle Physics* 2020. doi:10.1088/1475-7516/2020/12/047
- Choi, S. K. and 138 colleagues (ACT Collaboration) including **Gluscevic, V.** 2020. The Atacama Cosmology Telescope: a measurement of the Cosmic Microwave Background power spectra at 98 and 150 GHz. *Journal of Cosmology and Astroparticle Physics* 2020. doi:10.1088/1475-7516/2020/12/045
- Madhavacheril, M. S. and 55 colleagues (ACT Collaboration) including **Gluscevic, V.** 2020. Atacama Cosmology Telescope: Component-separated maps of CMB temperature and the thermal Sunyaev-Zel'dovich effect. *Physical Review D* 102. doi:10.1103/PhysRevD.102.023534
- Namikawa, T. and 53 colleagues (ACT Collaboration) including **Gluscevic, V.** 2020. Atacama Cosmology Telescope: Constraints on cosmic birefringence. *Physical Review D* 101. doi:10.1103/PhysRevD.101.083527
- Ade, P. and 249 colleagues (Simons Observatory Collaboration) including **Gluscevic, V.** 2019. The Simons Observatory: science goals and forecasts. *Journal of Cosmology and Astroparticle Physics* 2019. doi:10.1088/1475-7516/2019/02/056

White Papers

Below is a list of white papers to which V. Gluscevic contributed.

- Drlica-Wagner, A. and 38 colleagues et al., including **Gluscevic, V.** 2022. Report of the Topical Group on Cosmic Probes of Dark Matter for Snowmass 2021. [rXiv:2209.08215v1](#)
- **Gluscevic, V.** and 18 colleagues 2019. Cosmological Probes of Dark Matter Interactions: The Next Decade. *Bulletin of the American Astronomical Society* 51.
- Abazajian, K and 355 colleagues et al., including **Gluscevic, V.** 2022. Snowmass 2021 CMB-S4 White Paper. [arXiv:2203.08024](#)
- Mao, Y. Y. and 32 colleagues including **Gluscevic, V.** 2022. Snowmass2021: Vera C. Rubin Observatory as a Flagship Dark Matter Experiment. [arXiv:2203.07252](#)
- Dvorkin, C. and 12 colleagues et al., including **Gluscevic, V.** 2022. Dark Matter Physics from the CMB-S4 Experiment. [arXiv:2203.07064](#)
- Banerjee, A. and 17 colleagues et al., including **Gluscevic, V.** 2022. Snowmass2021 Cosmic Frontier White Paper: Cosmological Simulations for Dark Matter Physics. [arXiv:2203.07049](#)
- Boddy, K. K. and 18 colleagues et al., including **Gluscevic, V.** 2022. Astrophysical and Cosmological Probes of Dark Matter. [arXiv:2203.06380](#)
- The CMB-HD Collaboration et al., including **Gluscevic, V.** 2022. Snowmass2021 CMB-HD White Paper. [arXiv:2203.05728](#)
- Abazajian, K. and 226 colleagues including **Gluscevic, V.** 2019. CMB-S4 Decadal Survey APC White Paper. [arXiv:1908.01062](#)
- The Simons Observatory Collaboration and 282 colleagues including **Gluscevic, V.** 2019. The Simons Observatory: Astro2020 Decadal Project Whitepaper. [arXiv:1907.08284](#)
- Grin, D. and 7 colleagues including **Gluscevic, V.** 2019. Gravitational probes of ultra-light axions. *Bulletin of the American Astronomical Society* 51.
- Simon, J. and 11 colleagues including **Gluscevic, V.** 2019. Dynamical Masses for a Complete Census of Local Dwarf Galaxies. *Bulletin of the American Astronomical Society* 51.
- Bechtol, K. and 178 colleagues including **Gluscevic, V.** 2019. Dark Matter Science in the Era of LSST. *Bulletin of the American Astronomical Society* 51.
- Chluba, J. and 100 colleagues including **Gluscevic, V.** 2019. Spectral Distortions of the CMB as a Probe of Inflation, Recombination, Structure Formation and Particle Physics. *Bulletin of the American Astronomical Society* 51.
- Sehgal, N. and 24 colleagues including **Gluscevic, V.** 2019. Science from an Ultra-Deep, High-Resolution Millimeter-Wave Survey. *Bulletin of the American Astronomical Society* 51.
- Abazajian, K. and 224 colleagues including **Gluscevic, V.** 2019. CMB-S4 Science Case, Reference Design, and Project Plan. [arXiv:1907.04473](#)
- Hanany, S. and 81 colleagues including **Gluscevic, V.** 2019. PICO: Probe of Inflation and Cosmic Origins. [arXiv:1902.10541](#)
- Drlica-Wagner, A. and 99 colleagues including **Gluscevic, V.** 2019. Probing the Fundamental Nature of Dark Matter with the Large Synoptic Survey Telescope. [arXiv:1902.01055](#).
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Code and Skills

Open source code available at <https://github.com/veragluscevic/>. Languages: `python`, `cython`, C, Mathematica, MATLAB. Packages: MultiNest, HEALPix, CAMB, 21CMFast, CosmoMC, CLASS, Monte Python.

References

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