

Curriculum Vitae

G. Scott Watson

Department of Physics, Syracuse University,
Syracuse, NY 13244 USA

Phone: (401) 225-1177 Fax: (315) 443-9103

Email: gswatson@syr.edu

Homepage: <https://sites.google.com/site/garyscottwatson/>

Academic Affiliations

- **Syracuse University** *2010 – present*
Assistant Professor of Physics
- **Cornell University** *2012 – present*
Visiting Fellow
- **University of Michigan** *2008 – 2010*
Research Professor and Junior Fellow – Michigan Society of Fellows
- **Michigan Center for Theoretical Physics** *2007 – 2008*
Postdoctoral Fellow and Associate Member
- **University of Toronto** *2005 – 2007*
Postdoctoral Researcher – High Energy Theory Group

Education

- **Brown University** *2002 – 2005*
Ph.D. in Physics
Dissertation: *String Gases in the Early Universe*
Advisor: Robert Brandenberger
- **Brown University** *2000 – 2002*
M. S. in Physics
- **University of North Carolina at Wilmington** *1995 – 2000*
B. S. in Physics with distinction *Magna cum laude*
Dissertation: *An Exposition on Inflationary Cosmology*
- **University of North Carolina at Wilmington** *1995 – 2000*
B. S. in Mathematics with distinction

Financial Support and Grants

- NASA Grant (2013 – 2016), “Establishing the Post-Inflationary History from Fundamental Theory and Cosmological Observations” (\$450K)
Additional support from Syracuse University (\$58K)
- DOE Syracuse University Particle Theory Group Grant (2013 – 2016), “Theoretical Particle Physics and Cosmology”, Co-PI (\$1.07M)
- NSF Travel and Housing Support (2014 – 2015)

- NSF East Asia and Pacific Summer Institutes for U.S. Graduate Students (EAPSI),
Summer support for graduate student to visit abroad
- Syracuse University Assistant Professor Startup
- University of Michigan (2008 – 2010), Office of Vice President Research Grant (\$200K)

Awards and Honors

- King's College London Lectureship (declined) *2012*
- Syracuse University, "Outstanding Teaching Award" *2010 – 2011*
- Distinguished Visitor, University of Texas – Austin *Spring 2009*
- Early Research Award, Michigan Department of Physics *2008, 2009, 2010*
- Michigan Society of Fellows (third year declined) *2008 – 2011*
- INFN Travel Award, Summer *Summer 2007*
- INFN and GGI Travel Award, Summer *Summer 2006*
- APS Honorarium, Review of Modern Physics *Spring 2006*
- Brown University Dissertation Fellowship *2004 – 2005*
- National Science Foundation - NATO Advanced Study Travel Award *Summer 2004*
- NASA Graduate Student Research Program Fellowship *2001 – 2003*
- Nicholson Award for Physics (Brown University) *Fall 2001*
- Teaching Fellowship (Brown University) *Spring 2000*
- Walter Schmid Award for Excellence in Physics (UNCW) *1999 – 2000*
- Fred Toney Scholar (UNCW) *1999 – 2000*
- UNCW Undergraduate Research Fellow *1999 – 2000*
- UNCW Physics Departmental Scholarship *1998 – 2000*

Conferences and Workshops Organized

Lead Organizer, *Dark Matter: From Colliders to the Cosmos* *Spring 2013*
with S. Cremonini (Cambridge and Texas A&M) and B. Dutta (Texas A&M)
Mitchell Institute, College Station, TX.

Organizer, *East Coast Gravity Meeting* *Summer 2012*
Syracuse University, Syracuse, NY

Lead Organizer, *Northeast Cosmology Meeting* *Fall 2011*
with S. Cremonini (Cambridge and Texas A&M) and R. Brandenberger (McGill)
McGill University, Montreal, Canada.

Organizer, *Cosmological Non-Gaussianity: Observations Confront Theory* *Spring 2011*
with D. Huterer (Michigan) and S. Shandera (Penn State)

Michigan Center for Theoretical Physics, University of Michigan, Ann Arbor, MI.

Lead Organizer, *Non-Thermal Cosmological Histories of the Universe* *October 2010*
with B. Acharya (ICTP) and R. Akhoury, D. Feldman, G. Kane, A. Pierce and K. Zurek (Michigan)
Michigan Center for Theoretical Physics,
University of Michigan, Ann Arbor, MI.

Lead Organizer, *Effective Field Theory in Cosmology Workshop* *May 2010*
with C. Burgess (Perimeter), F. Larsen (Michigan), and A. Tolley (Perimeter)
Michigan Center for Theoretical Physics,
University of Michigan, Ann Arbor, MI.

Lead Organizer, *LHC and Dark Matter Workshop* *January 2009*
with G. Kane and A. Pierce (Michigan)
Michigan Center for Theoretical Physics,
University of Michigan, Ann Arbor, MI.

Professional Service and Public Outreach

- Graduate Student Recruiting Committee, Syracuse University *2014 – present*
- Chair, Undergraduate Research Day Committee, Syracuse University *2014 – present*
- Reviewer, NASA Postdoctoral Program *2013 – present*
- NASA Inflation Probe Study Analysis Group (IPSAG) *2011 – present*
- Grant Referee for the National Science Foundation *2011 – present*
- External reviewer for South African Government *2011 – present*
- External reviewer for Georgian Government *2011 – present*
- Graduate Student Curriculum Committee – Syracuse University *2011 – 2014*
- Physics Department Colloquium Director – Syracuse University *2010 – 2014*
- Interview for Syracuse Post Standard,
“Syracuse University physicist explains the Big Bang breakthrough” *Fall 2014*
- Science Editor for children’s book,
“Stephen Hawking: Extraordinary Theoretical Physicist”, Core Library *Fall 2014*
- Syracuse Science Museum Public Lecture, “The Dark Side of the Universe” *Fall 2014*
- Panelist, NASA Astrophysics Theory Program (ATP) Grant Program *Fall 2013*
- Featured Guest: Buffalo Museum of Art and University of Buffalo,
Science and Art Cabaret *Fall 2012*
- New Scientist (article), “The dark side of antimatter” *Fall 2010*
- New Scientist (article),
“Dark matter sheds light on radiation from the galaxy’s heart” *Spring 2008*
- NASA Primordial Polarization Program Definition Team (PPPDT) *2008 – 2009*
- CMBPol Theory Working Group *2008 – 2009*

- University of Michigan, Saturday Morning Physics program *2008 – 2009*
- Brown University Extended Learning Program *2003 – 2005*
- Brown University Summer School Instructor *Summer 2002*
- Referee: Physical Review D, Physical Review Letters, Physics Letters B, Journal of High Energy Physics, Journal of Cosmology and Astroparticle Physics, and Nuclear Physics B.
- Textbook Referee and Content Consultant: Elsevier, Norton Publishing, Pearson Publishing, and World Scientific Publishing Company.
- Member, American Physical Society (APS), and APS topic group on gravitation (GGR).

Invited Seminars

- | | |
|--|---|
| • UC – Berkeley | • MIT |
| • Brown University
(Colloquium and Seminar) | • UNC – Chapel Hill |
| • Byrn Mawr College (Colloquium) | • UNC – Wilmington (Colloquium) |
| • Cambridge University, DAMTP | • Northeastern University (Colloquium) |
| • Carnegie Melon | • Ohio State University |
| • Case Western | • Penn State (Colloquium) |
| • CERN | • University of Pennsylvania |
| • University of Chicago | • Perimeter Institute |
| • City College NY (Colloquium) | • Princeton University |
| • Columbia University, ISCAP | • UC – Santa Barbara (KITP) |
| • Cornell University | • Stanford University |
| • UC – Davis | • SUNY – Albany (Colloquium) |
| • Dartmouth University | • SUNY – Buffalo (Colloquium and Seminar) |
| • Duke University | • Syracuse University
(Colloquium and Seminar) |
| • Fermilab | • Texas A&M University |
| • Harvard University | • University of Texas – Austin |
| • Haverford College (Colloquium) | • University of Utah |
| • King’s College London (Colloquium) | • Toronto University, CITA |
| • McGill University | • Wayne State University (Colloquium) |
| • University of Michigan | • Yeshiva University (Colloquium) |
| • University of Minnesota | |

Talks at Conferences and Workshops

- 2015 Invited Speaker – Workshop on Primordial Cosmology, Aspen Center for Physics, Aspen, CO
- 2015 Plenary Speaker – International Conference on Interconnections between Particle Physics and Cosmology, Deadwood, SD
- 2015 Invited Speaker – Stephen Hawking Workshop on Cosmology and Particle Physics, Brampton House, Birmingham, England
- 2015 Invited Speaker – “String/M-theory Compactifications and Moduli Stabilization”, Michigan Center for Theoretical Physics, University of Michigan, Ann Arbor, MI
- 2015 Invited Speaker – “Mitchell Workshop on Collider and Dark Matter Physics”, Texas A&M University, College Station, TX
- 2014 Invited Speaker – “Hidden Sector Dark Matter Workshop”, Michigan Center for Theoretical Physics, University of Michigan, Ann Arbor, MI
- 2014 Invited Speaker – Program on Particlegenesis, Kavli Institute for Theoretical Physics (KITP), University of California – Santa Barbara, CA
- 2014 Invited Speaker – NSF Rapid Response Workshop on “Non-minimal Hidden Sectors”, University of Pittsburgh, Pittsburgh, PA
- 2014 Invited Speaker – “Mitchell Workshop on Collider and Dark Matter Physics”, Texas A&M University, College Station, TX
- 2014 Invited Speaker – Stephen Hawking Workshop on Cosmology, Brampton House, Birmingham, England
- 2013 Discussion Leader – Program on Primordial Cosmology, KITP, University of California – Santa Barbara, CA
- 2013 Invited Speaker – Cosmo 2013, Cambridge University, UK
- 2013 Invited Speaker – SUSY 2013, Trieste, Italy
- 2013 Invited Speaker – Texas Symposium on Relativistic Astrophysics, UT Dallas, TX
- 2013 Invited Speaker – Cosmology after Planck Workshop, University of Michigan, Ann Arbor, MI
- 2013 Discussion Leader – New Challenges for Early Universe Cosmologists Workshop, Leiden
- 2012 Invited Speaker – String Phenomenology, 2012, Cambridge University, UK
- 2012 Invited Speaker – Effective Field Theories in Inflation, Lorentz Center, Leiden
- 2012 Invited Speaker – Mitchell Workshop on Quantum Gravity and Cosmology, Cook’s Branch, TX
- 2011 Plenary Speaker – String Phenomenology 2011, Madison, WI
- 2011 Plenary Speaker – PPC Conference, CERN, Geneva, Switzerland
- 2011 Plenary Speaker – Strings, Branes, and Supergravity, Istanbul, Turkey
- 2011 Speaker and Discussion Leader – Northeast Cosmology Meeting, McGill University, Montreal, Canada

- 2011 Aspects of Inflation Workshop, Texas A&M University, College Station, TX
- 2011 Workshop on Modified Gravity, Case Western University, Columbus, OH
- 2011 Plenary Speaker: Conference Summary – Cosmological Non-Gaussianity: Observations Confront Theory, MCTP, University of Michigan, Ann Arbor, MI
- 2010 Non-Thermal Cosmological Histories, MCTP, University of Michigan, Ann Arbor, MI
- 2010 Mitchell Workshop on Quantum Gravity and Cosmology, Cook's Branch, TX
- 2009 Perimeter workshop on Effective Field Theory of Inflation, Perimeter Institute, Canada
- 2009 Mitchell Workshop on LHC and String Phenomenology, Cook's Branch, TX
- 2009 Understanding the Dark Sector: Dark Matter and Dark Energy, Aspen CTP, Aspen CO
- 2009 LHC and Dark Matter, MCTP, University of Michigan, Ann Arbor, Michigan
- 2008 The Dark Side II, MCTP, University of Michigan, Ann Arbor, Michigan
- PASCOS 2008, Symposium on Particles, Strings and Cosmology, Waterloo, Canada
- 2008 A Decade of Dark Energy, Space Telescope Science Institute, Baltimore, MD
- 2008 String Vacuum Project, University of Arizona, Tucson, Arizona
- 2008 Workshop on Cosmological Frontiers in Fundamental Physics, APC, Paris, France
- 2008 The Great Lakes Strings Conference, Madison, Wisconsin
- 2007 Excursions in the Dark Workshop, Perimeter Institute, Waterloo, Canada
- 2007 Workshop on the String Landscape, McGill University, Montreal, Canada
- 2006 KITP Workshop on String Phenomenology, UCSB, Santa Barbara, CA
- COSMO 2006, International Conference on Particle Physics and Cosmology, Lake Tahoe, CA
- 2006 GGI Workshop on Astrophysics and Cosmology, Florence, Italy
- 2006 MCTP Workshop on Inflation after WMAP III, Univ. of Michigan, Ann Arbor, MI
- 2006 International Colloquium on Group Theoretic Methods in Theoretical Physics, City College of NY, NY
- 2005 Workshop on String Gas Cosmology, McGill University, Montreal, Canada
- COSMO 2004, International Conference on Particle Physics and Cosmology, Toronto, Canada
- PASCOS 2004, Symposium on Particles, Strings and Cosmology, Boston, MA
- 2004 Cargese String Workshop, Cargese, France
- 2003 East Coast Gravity Meeting, College Park, MD
- 2002 APS Division of Particles, Fields, and Cosmology, Williamsburg, VA
- COSMO 2002, International Conference on Particle Physics and Cosmology, Chicago, IL

Selected Schools, Workshops, Conferences, and Extended Visits

2015:

- Stephen Hawking workshop on Cosmology and Particle Physics, Great Brampton House, Hereford, England
- Workshop on Primordial Cosmology, Aspen Center for Theoretical Physics, Aspen, CO
- “Mitchell Workshop on Collider and Dark Matter Physics”, Texas A&M University, College Station, TX
- International Conference on Interconnections between Particle Physics and Cosmology, Deadwood, SD
- Michigan Center for Theoretical Physics String Theory Workshop, University of Michigan, Ann Arbor, MI
- Neighborhood Cosmology Workshop, Penn State University, State College, PA
- Long term visitor, Texas A&M University, College Station, TX
- Long term visitor, McGill University, Montreal, Quebec
- Long term visitor, University of Utah, Salt Lake City, UT

2014:

- Workshop on Particlegenesis, Kavli Institute for Theoretical Physics (KITP), University of California – Santa Barbara, CA
- Stephen Hawking workshop on Cosmology and Particle Physics, Great Brampton House, Hereford, England
- NSF Rapid Response Workshop on “Non-minimal Hidden Sectors”, University of Pittsburgh, Pittsburgh, PA
- “Mitchell Workshop on Collider and Dark Matter Physics”, Texas A&M University, College Station, TX
- Long term visitor (July-September), DAMTP, Cambridge University
- Visitor, KITP, University of California – Santa Barbara, CA

2013:

- Long term visitor (May-September), DAMTP, Cambridge University
- Visitor, KITP, University of California – Santa Barbara, CA
- Visitor at Perimeter Institute, Waterloo, Canada
- Cosmo 2013, Cambridge University, UK
- SUSY 2013, Trieste, Italy
- Texas Symposium on Relativistic Astrophysics, UT Dallas, TX
- Cosmology after Planck Workshop, University of Michigan, Ann Arbor, MI
- New Challenges for Early Universe Cosmologists Workshop, Leiden
- Mitchell Workshop on Quantum Gravity and Cosmology, Cook’s Branch, TX

2012:

- Newton Institute Program on String Phenomenology, Cambridge, UK
- Branes and Blackholes, King’s College London.
- Fourth Meeting of NASA ISPAG, “Physics of the Cosmos”

- Visitor, University of Amsterdam
- Effective Field Theory in Inflation Workshop, Leiden
- String Phenomenology 2012, Cambridge, England
- Long term visitor (May-August), DAMTP, Cambridge University
- Invited Speaker, Perimeter Institute, Waterloo, Canada
- Conformal Symmetry in More Than Two Dimensions Workshop, Texas A&M University, College Station, TX
- Mitchell Workshop on Quantum Gravity and Cosmology, Cook's Branch, TX

2011:

- Long term visitor (May-August), DAMTP, Cambridge University
- Strings 2011 Workshop, Benasque, Spain
- String Phenomenology 2011, Madison, WI
- PPC Conference, CERN, Geneva, Switzerland
- Workshop on Modified Gravity, Case Western University, Columbus, OH
- Northeast Cosmology Meeting, McGill University, Montreal, Canada
- Strings, Branes, and Supergravity, Istanbul, Turkey
- Aspects of Inflation Workshop,
- Cosmological Non-Gaussianity: Observations Confront Theory, MCTP, University of Michigan, Ann Arbor, MI

2010:

- Long term visitor, DAMTP, Cambridge University
- Workshop on Non-Thermal Cosmological Histories of the Universe, Michigan Center for Theoretical Physics
- Workshop on Effective Field Theory and Cosmology, Michigan Center for Theoretical Physics
- Strings 2010, Texas A&M University
- String Phenomenology 2010, Paris, France
- Mitchell Workshop on Quantum Gravity and Cosmology, Cook's Branch, TX
- Long term visitor, Mitchell Institute for Fundamental Physics and Astronomy, Texas A&M University

2009:

- Perimeter workshop on Effective Field Theory of Inflation, Perimeter Institute, Canada
- Workshop on Fundamental Aspects of String Theory, KITP, UCSB, Santa Barbara, CA
- Mitchell Workshop on LHC and String Phenomenology, Cook's Branch, TX
- Understanding the Dark Sector: Dark Matter and Dark Energy, Aspen CTP, Aspen CO
- LHC and Dark Matter Workshop, MCTP, Ann Arbor, MI
- Visitor, Perimeter Institute
- Visitor, Syracuse
- Visitor, University of Texas – Austin

2008:

- CMB Polarization Workshop: Theory and Foregrounds, Fermilab

- Simon's Workshop on Strings, Geometry, and the LHC, Stony Brook, NY
- Strings 2008, CERN, Geneva, Switzerland
- String Vacuum Project 2008, University of Arizona, Tucson, AZ
- PASCOS 2008, Symposium on Particles, Strings, and Cosmology, Perimeter Institute, Waterloo, Canada
- The Dark Side II, MCTP, University of Michigan, Ann Arbor, MI
- A Decade of Dark Energy, Space Telescope Science Institute, Baltimore, MD
- Workshop on Cosmological Frontiers in Fundamental Physics, APC, Paris, France
- The Great Lake Strings Conference, Madison, WI
- LHC New Physics Signatures Workshop, MCTP, Ann Arbor, MI
- Visitor, Case Western
- Visitor, CERN
- Visitor, UC-Berkeley
- Visitor, UNC-Chapel Hill
- Visitor, Fermilab
- Visitor, Ohio State University

2007:

- Frontiers of Modern Cosmology, Perimeter Institute, Waterloo, Canada
- Strings 2007 Workshop, Benasque, Spain
- String Phenomenology Workshop, Rome, Italy
- Excursions in the Dark Workshop, Perimeter Institute, Waterloo, Canada
- Workshop on G2 Compactifications, MCTP, Ann Arbor, MI
- Gordon Kane Fest, MCTP, Ann Arbor, MI
- International Workshop on the Interconnection Between Particle Physics and Cosmology, Texas A & M, College Station, Texas
- Visitor, Univ. of California-Davis
- Visitor, DAMTP - Cambridge University
- Visitor, McGill University
- Visitor, Perimeter Institute, Waterloo, Canada

2006:

- Workshop on String Phenomenology, KITP, UCSB, Santa Barbara, CA
- COSMO 2006, International Conference on Particle Physics and Cosmology, Lake Tahoe, CA
- GGI Workshop on Astrophysics and Cosmology, Florence, Italy
- MCTP Workshop on Inflation after WMAP III, Univ. of Michigan, Ann Arbor, MI
- International Colloquium on Group Theory Methods in Theoretical Physics, City College of NY, NY
- PI/UT/CITA Workshop (CIAR Cosmology & Gravity Focus Group), Toronto, Canada
- Visitor, Columbia University
- Visitor, Harvard University
- Visitor, McGill University

- Visitor, Michigan University
- Visitor, Perimeter Institute

2005:

- Workshop on Gravitational Aspects of String Theory, Fields Institute, Toronto, Canada
- 5th and 6th Northeast Workshop on String Cosmology, Columbia University, NY
- Workshop on Topological Defects and Cosmology, McGill University, Montreal, Canada
- Workshop on String Gas Cosmology, McGill University, Montreal, Canada
- Workshop on String Phenomenology, Perimeter Institute, Waterloo, Canada
- Visitor, McGill University
- Visitor, MIT Center for Theoretical Physics
- Visitor, Brown University

2004:

- 3rd and 4th Northeast Workshop on String Cosmology, Columbia University, NY
- COSMO 2004, International Conference on Particle Physics and Cosmology, CITA, Toronto, Ontario, Canada
- PASCOS 2004, International Symposium on Particles, Strings and Cosmology, Boston, MA
- Cargese Summer School, "String Theory: from Gauge Interactions to Cosmology"
- Visitor, Perimeter Institute
- Visitor, University of North Carolina - Wilmington

2003:

- 1st and 2nd Northeast Workshop on String Cosmology, Columbia University, NY
- Prospects in Theoretical Physics (PITP) Summer School, Institute for Advanced Study, Princeton, NJ
- East Coast Gravity Meeting, College Park, Maryland
- Visitor, University of North Carolina - Wilmington

2002:

- APS Division of Particles, Fields, and Cosmology, Williamsburg, VA
- COSMO 2002, International Conference on Particle Physics and Cosmology, Chicago, IL
- Visitor, CERN Theoretical Division, Geneva, Switzerland

2001-2000:

- PASCOS 2001, International Symposium on Particles, Strings and Cosmology, Chapel Hill, NC
- Visitor, University of North Carolina - Chapel Hill, NC

Teaching and Mentoring

Graduate Students Supervised:

- Richard Galvez (2012 – 2015) (Postdoc at Vanderbilt University)

- Ogan Ozsoy (2012 – present)
- Gizem Sengor (2014 – present)
- Julian Georg (2014 – present)

Postdocs Supervised:

- Kuver Sinha (2013 – present)
- Jing Shao (2011 – 2012) (Software Engineer, Newfield Wireless)
- Minjoon Park (2008 – 2010) (Postdoc, University of Massachusetts - Amherst)

Syracuse University, Instructor *2015*
Instructor for graduate course on mathematical methods in physics.

Syracuse University, Instructor *2014*
Instructor for large course (500+ students) in astronomy and cosmology.

Syracuse University, Instructor *2013*
Instructor for large course (400+ students) in astronomy and cosmology.

Syracuse University, Instructor *2012*
Instructor for graduate course on mathematical methods in physics.

Syracuse University, Instructor *2011-2012*
Instructor for undergraduate course on electrodynamics for physics majors and honors students.

Syracuse University, Instructor *2011-2012*
Co-Instructor for undergraduate course on electrodynamics (400+ students). Duties also included managing seven teaching assistants and recitations for the course.

Syracuse University, Instructor *2010-2011*
Instructor for undergraduate course on electrodynamics for physics majors and honors students.
Received teaching award for best teacher in the department – as voted by the students.

University of Michigan, Instructor *2008 – 2009*
Instructor for graduate level course on cosmology.

University of Michigan, Lecturer *2008 – 2009*
Public lecturer in the ‘Saturday Morning Physics’ program, whose goal is to provide the greater Ann Arbor community with a better understanding and appreciation of current physics research at the University of Michigan.

Brown University, Instructor *2003 – 2004*
Course for post-college graduates interested in the sciences, designed to give students an appreciation of the current ideas and trends in modern theoretical physics. Developed the approach of the course, gave all lectures and administered grades.

Brown University, Instructor *2002 – 2003*
Course for first year undergraduates and advanced high school students majoring in physics, designed to give students a quantitative introduction to past successes and recent advances in modern physics. Developed course structure and administered all grades.

Brown University, Teaching Assistant *2001 – 2003*

Professional References

- Robert Brandenberger – McGill University, Montreal, Canada
- Alan Guth – MIT, Boston, MA
- Dragan Huterer – University of Michigan, Ann Arbor, MI
- Gordon Kane – University of Michigan, Ann Arbor, MI
- Rocky Kolb – University of Chicago, Chicago, IL
- Malcolm Perry – Cambridge University, Cambridge, England

Books and Conference Proceedings

- [1] S. Watson, “Thermal history of the universe after inflation,”
To appear in conference proceedings of IX International Conference on Interconnections between Particle Physics and Cosmology (PPC2015)
- [2] S. Watson, “Reevaluating the Cosmological Origin of Dark Matter,” In “Kane, G.L. (ed.): Perspectives on supersymmetry II” 305-324, arXiv:0912.3003 [hep-th].
- [3] S. Watson, “Moduli trapping and string gas cosmology,” *Prepared for NATO Advanced Study Institute and EC Summer School on String Theory: From Gauge Interactions to Cosmology, Cargese, France, 7- 19 Jun 2004*
- [4] S. Watson, “Stabilizing moduli with string cosmology,” Published in “Boston 2004, Particles, strings and cosmology” 493-497, arXiv:hep-th/0409281.

Publications

- [1] A. Erickcek, K. Sinha, and S. Watson, “Thermal Dark Matter from a Non-thermal History,”
To appear.
- [2] O. Ozsoy, G. Sengor, K. Sinha, and S. Watson, “The Effective Field Theory of Reheating,”
To appear.
- [3] J. Georg, G. Sengor, and S. Watson, “Primordial Black Hole Constraints on Split-SUSY Cosmology,” To appear.
- [4] O. Ozsoy, G. Sengor, K. Sinha, and S. Watson, “A Model Independent Approach to Reheating,”
Submitted to PRL.
- [5] G. Kane, K. Sinha and S. Watson, “Cosmological Moduli and the Post-Inflationary Universe: A Critical Review,” (Invited Review), Int. J. Mod. Phys. D **24**, no. 08, 1530022 (2015) [arXiv:1502.07746 [hep-th]].
- [6] O. Ozsoy, K. Sinha and S. Watson, “How Well Can We Really Determine the Scale of Inflation?,”
Phys. Rev. D **91**, no. 10, 103509 (2015) [arXiv:1410.0016 [hep-th]].
- [7] J. Fan, O. Ozsoy and S. Watson, “Nonthermal histories and implications for structure formation,”
Phys. Rev. D **90**, no. 4, 043536 (2014) [arXiv:1405.7373 [hep-ph]].

- [8] L. Iliesiu, D. J. E. Marsh, K. Moodley and S. Watson, “Constraining supersymmetry with heavy scalars: Using the CMB,” *Phys. Rev. D* **89**, no. 10, 103513 (2014) [arXiv:1312.3636 [astro-ph.CO]].
- [9] K. N. Abazajian *et al.* [Topical Conveners: K.N. Abazajian, J.E. Carlstrom, A.T. Lee Collaboration], “Neutrino Physics from the Cosmic Microwave Background and Large Scale Structure,” *Astropart. Phys.* **63**, 66 (2015) [arXiv:1309.5383 [astro-ph.CO]].
- [10] K. N. Abazajian *et al.*, “Inflation Physics from the Cosmic Microwave Background and Large Scale Structure,” *Astropart. Phys.* **63**, 55 (2015) [arXiv:1309.5381 [astro-ph.CO]].
- [11] R. Easther, R. Galvez, O. Ozsoy and S. Watson, “Supersymmetry, Nonthermal Dark Matter and Precision Cosmology,” *Phys. Rev. D* **89**, no. 2, 023522 (2014) [arXiv:1307.2453 [hep-ph]].
- [12] J. K. Bloomfield, E. E. Flanagan, M. Park and S. Watson, “Dark energy or modified gravity? An effective field theory approach,” *JCAP* **1308**, 010 (2013) [arXiv:1211.7054 [astro-ph.CO]].
- [13] E. M. Mueller, R. Bean and S. Watson, “Cosmological implications of the effective field theory of cosmic acceleration,” *Phys. Rev. D* **87**, no. 8, 083504 (2013) [arXiv:1209.2706 [astro-ph.CO]].
- [14] A. Avgoustidis, S. Cremonini, A. C. Davis, R. H. Ribeiro, K. Turzynski and S. Watson, “Decoupling Survives Inflation: A Critical Look at Effective Field Theory Violations During Inflation,” *JCAP* **1206**, 025 (2012) [arXiv:1203.0016 [hep-th]].
- [15] A. Avgoustidis, S. Cremonini, A. C. Davis, R. H. Ribeiro, K. Turzynski and S. Watson, “The Importance of Slow-roll Corrections During Multi-field Inflation,” *JCAP* **1202**, 038 (2012) [arXiv:1110.4081 [astro-ph.CO]].
- [16] G. Kane, J. Shao, S. Watson and H. B. Yu, “The Baryon-Dark Matter Ratio Via Moduli Decay After Affleck-Dine Baryogenesis,” *JCAP* **1111**, 012 (2011) [arXiv:1108.5178 [hep-ph]].
- [17] G. Kane, R. Lu and S. Watson, “PAMELA satellite data as a signal of non-thermal wino LSP dark matter,” *Nucl. Instrum. Meth. A* **630**, 82 (2011).
- [18] P. Sandick and S. Watson, “Constraints on a Non-thermal History from Galactic Dark Matter Spikes,” *Phys. Rev. D* **84**, 023507 (2011) [arXiv:1102.2897 [astro-ph.CO]].
- [19] M. Park, K. M. Zurek and S. Watson, “A Unified Approach to Cosmic Acceleration,” *Phys. Rev. D* **81**, 124008 (2010) [arXiv:1003.1722 [hep-th]].
- [20] S. Watson, “Reevaluating the Cosmological Origin of Dark Matter,” *Adv. Ser. Direct. High Energy Phys.* **21**, 305 (2010) [arXiv:0912.3003 [hep-th]].
- [21] B. S. Acharya, G. Kane, S. Watson, P. Kumar, “A Non-thermal WIMP Miracle,” *Phys. Rev. D* **80**, 083529 (2009). [arXiv:0908.2430 [astro-ph.CO]].
- [22] G. Kane, R. Lu, S. Watson, “PAMELA Satellite Data as a Signal of Non-Thermal Wino LSP Dark Matter,” *Phys. Lett.* **B681**, 151-160 (2009). [arXiv:0906.4765 [astro-ph.HE]].
- [23] J. Aguirre, A. Amblard, A. Ashoorioon, C. Baccigalupi, A. Balbi, J. Bartlett, N. Bartolo, D. Benford *et al.*, “Observing the Evolution of the Universe,” [arXiv:0903.0902 [astro-ph.CO]].
- [24] S. Dodelson, R. Easther, S. Hanany, L. McAllister, S. Meyer, L. Page, P. Ade, A. Amblard *et al.*, “The Origin of the Universe as Revealed Through the Polarization of the Cosmic Microwave Background,” [arXiv:0902.3796 [astro-ph.CO]].
- [25] P. Grajek, G. Kane, D. Phalen, A. Pierce, S. Watson, “Is the PAMELA Positron Excess Winos?,” *Phys. Rev. D* **79**, 043506 (2009). [arXiv:0812.4555 [hep-ph]].

- [26] D. Baumann *et al.* [CMBPol Study Team Collaboration], “CMBPol Mission Concept Study: Probing Inflation with CMB Polarization,” AIP Conf. Proc. **1141**, 10-120 (2009). [arXiv:0811.3919 [astro-ph]].
- [27] G. Kane, S. Watson, “Dark Matter and LHC: What is the Connection?,” Mod. Phys. Lett. **A23**, 2103-2123 (2008). [arXiv:0807.2244 [hep-ph]].
- [28] P. Grajek, G. Kane, D. J. Phalen, A. Pierce, S. Watson, “Neutralino Dark Matter from Indirect Detection Revisited,” [arXiv:0807.1508 [hep-ph]].
- [29] B. S. Acharya, P. Kumar, K. Bobkov, G. Kane, J. Shao, S. Watson, “Non-thermal Dark Matter and the Moduli Problem in String Frameworks,” JHEP **0806**, 064 (2008). [arXiv:0804.0863 [hep-ph]].
- [30] N. Kaloper, S. Watson, “Geometric precipices in string cosmology,” Phys. Rev. **D77**, 066002 (2008). [arXiv:0712.1820 [hep-th]].
- [31] B. Greene, S. Judes, J. Levin, S. Watson, A. Weltman, “Cosmological moduli dynamics,” JHEP **0707**, 060 (2007). [hep-th/0702220].
- [32] C. de Rham, S. Watson, “Living on a dS brane: Effects of KK modes on inflation,” Class. Quant. Grav. **24**, 4219-4234 (2007). [hep-th/0702048 [HEP-TH]].
- [33] S. Watson, “String gases in the early universe,”
- [34] S. Watson, M. J. Perry, G. L. Kane, F. C. Adams, “Inflation without Inflaton(s),” JCAP **0711**, 017 (2007). [hep-th/0610054].
- [35] S. Cremonini, S. Watson, “Dilaton dynamics from production of tensionless membranes,” Phys. Rev. **D73**, 086007 (2006). [hep-th/0601082].
- [36] T. Battefeld, S. Watson, “String gas cosmology,” Rev. Mod. Phys. **78**, 435-454 (2006). [hep-th/0510022].
- [37] R. Brandenberger, Y. -K. E. Cheung, S. Watson, “Moduli stabilization with string gases and fluxes,” JHEP **0605**, 025 (2006). [hep-th/0501032].
- [38] S. Watson, “Moduli trapping and string gas cosmology,”
- [39] S. Watson, “Stabilizing moduli with string cosmology,” [hep-th/0409281].
- [40] S. Watson, “Moduli stabilization with the string Higgs effect,” Phys. Rev. **D70**, 066005 (2004). [hep-th/0404177].
- [41] T. Battefeld, S. Watson, “Effective field theory approach to string gas cosmology,” JCAP **0406**, 001 (2004). [hep-th/0403075].
- [42] S. Watson, “UV perturbations in brane gas cosmology,” Phys. Rev. **D70**, 023516 (2004). [hep-th/0402015].
- [43] S. Watson, R. Brandenberger, “Linear perturbations in brane gas cosmology,” JHEP **0403**, 045 (2004). [hep-th/0312097].
- [44] S. Watson, R. Brandenberger, “Stabilization of extra dimensions at tree level,” JCAP **0311**, 008 (2003). [hep-th/0307044].
- [45] R. Brandenberger, G. Geshnizjani, S. Watson, “On the initial conditions for brane inflation,” Phys. Rev. **D67**, 123510 (2003). [hep-th/0302222].

- [46] S. Watson, R. H. Brandenberger, “Isotropization in brane gas cosmology,” *Phys. Rev.* **D67**, 043510 (2003). [hep-th/0207168].
- [47] S. Watson, “An Exposition on inflationary cosmology,” [astro-ph/0005003].