

RICHARD EASTHER

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Academic Employment

1 January 2012 - Professor of Physics, Head of Department of Physics, University of Auckland

1 July 2009 - 31 December, 2011 Associate Professor of Physics and Astronomy, Yale University.

1 January 2004 - 30 June 2009 Assistant Professor of Physics and Astronomy, Yale University.

26 October 2000 - 31 December 2003 Post-doctoral Fellow, Institute for Strings, Cosmology and Astroparticle Physics (ISCAP), Columbia University.

1 September 1997 - 1 September 2000 Research Associate, Physics Department, Brown University.

1 October, 1994 - 1 October, 1996 Postdoctoral Fellow, Waseda University, Japan.

Education

In 1994 I completed a **Doctorate of Philosophy** in Physics, at the University of Canterbury, New Zealand, and hold a **Bachelor of Science (Honours)** in Physics, from the University of Canterbury (1990).

Honors and Awards

Burbidge Lecturer, Auckland Astronomical Society (2012)

Kavli Frontiers Fellow (2010)

United States National Science Foundation, Career Award (2008)

Japan Society for Promotion of Science, Post-doctoral Fellowship (1994)

Memberships

American Physical Society

Foundational Questions Institute (FQXi)

Royal Society of New Zealand, Member

Royal Astronomical Society of New Zealand

International Astronomical Union (IAU)

Refereeing and Examining

I am a referee for *Classical and Quantum Gravity*, *The Physical Review*, *Physical Review Letters*, *Physics Letters B*, *The Journal of High Energy Physics* and *The Journal of Cosmology and Astroparticle Physics*, and have served on panels for the Australian Research Council, FQXi and NSF, in addition to refereeing proposals for these agencies, the Department of Energy and the STFC.

Outreach and Media

I have given many public lectures, and have been interviewed about my work by *Scientific American*, the *Los Angeles Times*, the *San Francisco Chronicle*, the *Wall Street Journal*, *Süddeutsche Zeitung* [Germany], *Facts Magazine* [Switzerland], *Science News*, *New Zealand Listener*, *Nature* and the *BBC World Service*, among others. I have been a TedX speaker, I am cofounder of the Auckland-based thinkScience festival, and a consultant to the World Science Festival in Brisbane.

Major Grant Support

FQXi 2016-2018 \$120,000 (Principal Investigator)

Te Punaha Matatini, 2015- Principal Investigator

London Royal Society Travel Award 2012-14 £12,000 [With Hiranya Peiris]

National Science Foundation 2010 MRI Proposal, High Performance Computing (Co-I)

National Science Foundation 2008-2012: Career Award (\$400,000)

FQXi 2006-2008: \$106,594 (Principal Investigator)

Department of Energy 2004 - 2011 ~ \$100,000 per annum per faculty member. (High Energy Theory Program, Task C).

Conference and Workshop Organization

December 2014 **University of Auckland**, CosPA (Cosmology and Particle Astrophysics) 2014

July 2012 **University of Auckland**, The LHC, Particle Physics and Cosmos – convener and main organizer..

July 2011 **Cornell University**, Workshop on String Cosmology

December 2010 **Harish-Chandra Research Institute, Allahabad** Primordial features and non-Gaussianities Workshop and Conference, Scientific Organizing Committee

May - June 2009 **Aspen Center for Physics**, Workshop Organizer, “Fingerprints of the Early Universe”

Spring, 2009 **New Directions in Cosmology, KITP-C Beijing**, International Organizing Committee, “New Directions in Cosmology” workshop.

December 2008 **Texas Meeting in Relativistic Astrophysics, Vancouver**, Convener, Early Universe Panel

December 2005 **Kavli Meeting, Chicago**, Convened Gravity/Branes/Strings session.

September 2004 **COSMO-04, Toronto**, Convened Inflation/Perturbations panel.

Supervision

Post-doctoral:

Ben Shlaer, December 2016 -
Shaun Hotchkiss, January 2016 -
Grigor Aslanyan, September 2012 - 2015
Raphael Flauger, Fall 2009 - 2011
Eugene Lim, Fall 2004 - 2007

Graduate Students:

Faber Edwards, 2016 [MSc, Advisor]
Chang Liu, 2016 [MSc, Advisor]
Nathan Musoke, 2016- [PhD, Advisor]
Layne Price, 2012- 2015 [PhD, Advisor, Graduated]
Hal Finkel, 2007-11 [PhD Advisor, Graduated]
Peter Adshead, 2006-2010 [PhD Advisor, Graduated]
Tom Giblin, 2005-2008 [PhD Advisor, Graduated]
Amir Aazami, Summer 2005

Biographical Sketch

Richard Easter was born and educated in New Zealand. He has worked in many areas of astrophysics and theoretical cosmology since graduating from the University of Canterbury in 1994. He held post-doctoral appointments at Waseda University (Japan), Brown and Columbia, and was a professor at Yale University for eight years. He returned to New Zealand at the end of 2011, and is now Professor and Head of Department of Physics at the University of Auckland. His work ranges from constructing astrophysical tests of theories of the very early universe to the cosmological implications of string theory.

Research Presentations

- December 2016 **Australia-Pacific Physics Congress - Australian Institute of Physics, Brisbane** Invited Plenary
- July 2016 **International Centre for Theoretical Physics, Trieste** Invited Lecture
- September 2015 **Australian National University**, Colloquium
- May 2015 **Tufts University, Boston Area Cosmology Seminar**
- April 2015 **Columbia University**, Seminar
- January 2015 **University of Canterbury**, Colloquium,
- August 2014 **KICP-Workshop: Status and Future of Inflationary Physics**, Invited speaker
- April 2014 **University of Queensland, Brisbane**, Colloquium
- April 2014 **Monash University**, Colloquium
- January 2014 **Waseda University**, Invited Lecture series
- January 2014 **KEK, Japan**, Seminar
- January 2014 **Kyoto University**, Seminar
- January 2014 **Tokyo University**, Seminar
- September 2013 **New Zealand Institute of Physics, Nelson**, Conference Keynote
- September 2013 **Institute for Advanced Study, Massey**, Seminar
- September 2013 **Cosmo 2013, University of Cambridge**, Invited Plenary
- August 2013 **Victoria University**, Seminar
- May 2013 **Royal Astronomical Society of New Zealand**, Conference Keynote
- April 2013 **Kavli Institute for Theoretical Physics**, Seminar
- March 2013 **University of Sydney**, Colloquium
- February 2013 **COSPA - CAASTRO Workshop, U. Melbourne**, Invited Plenary
- October 2012 **Otago University**, Colloquium
- May 2012 **University of Canterbury**, Colloquium
- April 2012 **Taiwan National University, “Spring School”** Four invited lectures
- February 2012 **6th Australasian Conference on General Relativity and Gravitation, Queenstown**, Plenary
- October 2011 **Brown University**, Seminar
- September 2011 **Northeast Cosmology Workshop, McGill University, Montreal**, Conference presentation
- August 2011 **FQXi Conference “Setting Time Aright”**, Copenhagen Conference presentation
- July 2011 **PASCOS, University of Cambridge** Conference presentation

- March 2011 **Massachusetts Institute of Technology**, Boston Area Cosmology Seminar
- March 2011 **Victoria University, Wellington**, Colloquium
- February 2011 **University College, London**, Seminar
- January 2011 **University of Florida, Gainesville** Seminar
- Decemer 2010 **Primordial Features and Non-Gaussianity, Harish Chandra Research Institute, India** Conference presentation, and closing summary.
- October 2010 **Gravitational Waves 2010 Workshop, Minneapolis** Conference presentation.
- August 2010 **SI2010, Japan** Seminar, and two lectures.
- April 2010 **Caltech TAPIR** Seminar
- April 2010 **University of California, Santa Cruz** Colloquium
- April 2010 **Jet Propulsion Laboratory, Pasadena** Seminar
- April 2010 **University of Southern California** Colloquium
- December 2009 **New Horizons in Cosmology, University of Pennsylvania** Conference presentation.
- October 2009 **Central Connecticut State University** Colloquium
- August 2009 **Primordial Gravitational Wave Workshop, DAMTP Cambridge** Conference presentation.
- May 2009 **Aspen Center for Physics** Lecture
- April 2009 **Rochester Institute of Technology** Colloquium
- March, 2009 **Galileo Galilei Institute, Florence Italy** Seminar
- December, 2008 **Texas Symposium in Relativistic Astrophysics, Vancouver** Session chair, and presentation.
- October 2008 **Bates College** Colloquium
- September 2008 **Harvard, CfA Theory and Computation** Colloquium
- September 2008 **Non-Gaussianity Workshop, DAMTP Cambridge** Conference presentation.
- July 2008 **Quantum to Cosmos** Plenary
- June 2008 **CMBPol Workshop** Plenary
- May 2008 **Neutrinos '08, Christchurch** Plenary
- May 2008 **Dartmouth** Departmental Colloquium
- April 2008 **University of Maryland** Colloquium
- November 2007 **University of Utah** Departmental Colloquium
- November 2007 **Northeastern University** Departmental Colloquium
- September 2007 **Perimeter Institute, Waterloo** *Frontiers of Modern Cosmology* Conference presentation.
- August 2007 **University of Toronto, CITA** Seminar.
- July 2007 **Foundational Questions in Physics and Cosmology, Reykjavik**, Conference presentation.

- May 2007 **Brookhaven National Laboratory** *Brookhaven Forum* Conference presentation.
- May, 2007 **Texas A&M** Particle Physics and Cosmology Conference 2007. Conference presentation, and panel member.
- February, 2007 **Massachusetts Institute of Technology**, Boston Area Cosmology Seminar
- December, 2006 **26th Texas Meeting in Relativistic Astrophysics, Melbourne, Australia**, Contributed Talk.
- November, 2006 **Perimeter Institute, Waterloo**, Conference Presentation
- October, 2006 **Stanford University**, Seminar
- October, 2006 **UC Berkeley**, Seminar
- September, 2006 **University of Pennsylvania**, Seminar
- August, 2006 **KITP, Santa Barbara** *String Phenomenology Conference* Conference Presentation
- May, 2006 **University of Michigan** Invited Address *Inflation After WMAP Conference*
- February, 2006 **Brown University**, Seminar
- December, 2005 **Kavli Institute, Chicago**, Session Chair (Strings, Branes and Gravity), *New View of the Universe Conference*
- October, 2005 **Perimeter Institute, Waterloo**, Conference Presentation
- July, 2005 **Aspen Center for Physics** Lecture
- July, 2005 **Yale University, Astrometry Summer School**, Lecture
- March, 2005 **University of Waterloo**, Colloquium
- March, 2005 **Perimeter Institute**, Seminar
- February, 2005 **Massachusetts Institute of Technology**, Boston Area Cosmology Seminar
- December, 2004 **University of Massachusetts, Amherst**, Seminar
- December, 2004 **Brown University**, Seminar
- October, 2004 **Smith College** Colloquium
- May, 2004 **Beyond Einstein Conference, SLAC**, Conference presentation
- May, 2004 **Harvard University**, Boston Area Joint Theory Seminar

Publications

87. **Testing for New Physics: Neutrinos and the Primordial Power Spectrum**
N. Canac, G. Aslanyan, K. N. Abazajian, R. Easther and L. C. Price.
arXiv:1606.03057 [astro-ph.CO]
DOI:10.1088/1475-7516/2016/09/022
JCAP **1609**, no. 09, 022 (2016)
86. **Ultracompact minihalos as probes of inflationary cosmology**
G. Aslanyan, L. C. Price, J. Adams, T. Bringmann, H. A. Clark, R. Easther,
G. F. Lewis and P. Scott.
arXiv:1512.04597 [astro-ph.CO]
DOI:10.1103/PhysRevLett.117.141102
Phys. Rev. Lett. **117**, no. 14, 141102 (2016)
85. **Designing and testing inflationary models with Bayesian networks**
L. C. Price, H. V. Peiris, J. Frazer and R. Easther.
arXiv:1511.00029 [astro-ph.CO]
DOI:10.3204/PUBDB-2016-01166, 10.1088/1475-7516/2016/02/049, 10.3204/PUBDB-
2015-04810
JCAP **1602**, no. 02, 049 (2016)
DESY-15-199
84. **Learn-As-You-Go Acceleration of Cosmological Parameter Estimates**
G. Aslanyan, R. Easther and L. C. Price.
arXiv:1506.01079 [astro-ph.IM]
10.1088/1475-7516/2015/09/005
JCAP **1509**, no. 09, 005 (2015)
83. **Signatures of the Very Early Universe: Inflation, Spatial Curvature
and Large Scale Anomalies**
G. Aslanyan and R. Easther.
arXiv:1504.03682 [astro-ph.CO]
10.1103/PhysRevD.91.123523
Phys. Rev. D **91**, no. 12, 123523 (2015)
82. **MultiModeCode: An efficient numerical solver for multifield infla-
tion**
L. C. Price, J. Frazer, J. Xu, H. V. Peiris and R. Easther.
arXiv:1410.0685 [astro-ph.CO]
10.1088/1475-7516/2015/03/005
JCAP **1503**, no. 03, 005 (2015)
81. **Gravitational wave consistency relations for multifield inflation**
L. C. Price, H. V. Peiris, J. Frazer and R. Easther.
arXiv:1409.2498 [astro-ph.CO]
10.1103/PhysRevLett.114.031301
Phys. Rev. Lett. **114**, no. 3, 031301 (2015)
80. **Inflating an Inhomogeneous Universe**
R. Easther, L. C. Price and J. Rasero.
arXiv:1406.2869 [astro-ph.CO]
10.1088/1475-7516/2014/08/041
JCAP **1408**, 041 (2014)

79. **The Knotted Sky II: Does BICEP2 require a nontrivial primordial power spectrum?**
K. N. Abazajian, G. Aslanyan, R. Easther and L. C. Price.
arXiv:1403.5922 [astro-ph.CO]
10.1088/1475-7516/2014/08/053
JCAP **1408**, 053 (2014)
78. **The Knotted Sky I: Planck constraints on the primordial power spectrum**
G. Aslanyan, L. C. Price, K. N. Abazajian and R. Easther.
arXiv:1403.5849 [astro-ph.CO]
10.1088/1475-7516/2014/08/052
JCAP **1408**, 052 (2014)
77. **Simple predictions from multifield inflationary models**
R. Easther, J. Frazer, H. V. Peiris and L. C. Price.
arXiv:1312.4035 [astro-ph.CO]
10.1103/PhysRevLett.112.161302
Phys. Rev. Lett. **112**, 161302 (2014)
76. **Large Scale Anomalies in the Microwave Background: Causation and Correlation**
G. Aslanyan and R. Easther.
arXiv:1308.6593 [astro-ph.CO]
10.1103/PhysRevLett.111.261301
Phys. Rev. Lett. **111**, no. 26, 261301 (2013)
75. **Planck Constraints on Monodromy Inflation**
R. Easther and R. Flauger.
arXiv:1308.3736 [astro-ph.CO]
10.1088/1475-7516/2014/02/037
JCAP **1402**, 037 (2014)
74. **Supersymmetry, Nonthermal Dark Matter and Precision Cosmology**
R. Easther, R. Galvez, O. Ozsoy and S. Watson.
arXiv:1307.2453 [hep-ph]
10.1103/PhysRevD.89.023522
Phys. Rev. D **89**, no. 2, 023522 (2014)
73. **Gravitational Waves from Oscillon Preheating**
S. Y. Zhou, E. J. Copeland, R. Easther, H. Finkel, Z. G. Mou and P. M. Saffin.
arXiv:1304.6094 [astro-ph.CO]
10.1007/JHEP10(2013)026
JHEP **1310**, 026 (2013)
72. **Initial conditions and sampling for multifield inflation**
R. Easther and L. C. Price.
arXiv:1304.4244 [astro-ph.CO]
10.1088/1475-7516/2013/07/027
JCAP **1307**, 027 (2013)
71. **Constraining Monodromy Inflation**
H. Peiris, R. Easther and R. Flauger.
arXiv:1303.2616 [astro-ph.CO]

10.1088/1475-7516/2013/09/018
JCAP **1309**, 018 (2013)

70. **Bayesian Analysis of Inflation III: Slow Roll Reconstruction Using Model Selection**
J. Norena, C. Wagner, L. Verde, H. V. Peiris and R. Easther.
arXiv:1202.0304 [astro-ph.CO]
10.1103/PhysRevD.86.023505
Phys. Rev. D **86**, 023505 (2012)
69. **Bayesian Analysis of Inflation II: Model Selection and Constraints on Reheating**
R. Easther and H. Peiris.
Phys. Rev. D **85**, 103533 (2012) [arXiv:1112.0326 [astro-ph.CO]]
68. **Oscillons After Inflation**
M. A. Amin, R. Easther, H. Finkel, R. Flauger and M. P. Hertzberg.
Phys. Rev. Lett. **108**, 241302 (2012) [arXiv:1106.3335 [astro-ph.CO]]
67. **Constraining holographic inflation with WMAP**
R. Easther, R. Flauger, P. McFadden and K. Skenderis.
JCAP **1109**, 030 (2011) [arXiv:1104.2040 [astro-ph.CO]]
66. **Caching and Interpolated Likelihoods: Accelerating Cosmological Monte Carlo Markov Chains**
A. Bouland, R. Easther and K. Rosenfeld.
JCAP **1105**, 016 (2011) [arXiv:1012.5299 [astro-ph.CO]]
65. **Inflaton Fragmentation and Oscillon Formation in Three Dimensions**
M. A. Amin, R. Easther and H. Finkel
JCAP **1012** (2010) 001 [arXiv:1009.2505 [astro-ph.CO]]
64. **Bayesian Analysis of Inflation I: Parameter Estimation for Single Field Models**
M. J. Mortonson, H. V. Peiris and R. Easther
Phys. Rev. D **83** (2011) 043505 [arXiv:1007.4205 [astro-ph.CO]]
63. **Inflation and the Scale Dependent Spectral Index: Prospects and Strategies**
P. Adshead, R. Easther, J. Pritchard and A. Loeb
JCAP **1102** (2011) 021 [arXiv:1007.3748 [astro-ph.CO]]
62. **PSpectRe: A Pseudo-Spectral Code for (P)reheating**
R. Easther, H. Finkel and N. Roth
JCAP **1012** (2010) 025 [arXiv:1005.1921 [astro-ph.CO]]
61. **Delayed Reheating and the Breakdown of Coherent Oscillations**
R. Easther, R. Flauger and J. B. Gilmore.
arXiv:1003.3011 [astro-ph.CO]
JCAP **1104**, 027 (2011)
60. **A New Mechanism for Bubble Nucleation: Classical Transitions**
R. Easther, J. T. Giblin, L. Hui and E. A. Lim
Phys. Rev. D **80**, 123519 (2009) [arXiv:0907.3234 [hep-th]]
59. **Generating Gravitational Waves After Inflation,**
R. Easther,
Nucl. Phys. Proc. Suppl. **194**, 33 (2009) [arXiv:0906.4527 [astro-ph.CO]].

58. **The ‘in-in’ Formalism and Cosmological Perturbations**
P. Adshead, R. Easther and E. A. Lim
Phys. Rev. D **80**, 083521 (2009) [arXiv:0904.4207 [hep-th]].
57. **Non-Gaussianity as a Probe of the Physics of the Primordial Universe and the Astrophysics of the Low Redshift Universe**
E. Komatsu *et al.*
arXiv:0902.4759 [astro-ph.CO]
56. **The Origin of the Universe as Revealed Through the Polarization of the Cosmic Microwave Background**
S. Dodelson *et al.*
arXiv:0902.3796 [astro-ph.CO]
55. **GUT-Scale Primordial Black Holes: Consequences and Constraints**
R. Anantua, R. Easther and J. T. Giblin
Phys. Rev. Lett. **103**, 111303 (2009) [arXiv:0812.0825 [astro-ph]]
54. **CMBPol Mission Concept Study: Probing Inflation with CMB Polarization**
D. Baumann *et al.* [CMBPol Study Team Collaboration]
AIP Conf. Proc. **1141**, 10 (2009) [arXiv:0811.3919 [astro-ph]]
53. **Neutrinos and Future Concordance Cosmologies**
P. Adshead and R. Easther
J. Phys. Conf. Ser. **136**, 022044 (2008) [arXiv:0810.2591 [astro-ph]]
52. **Cosmology With Many Light Scalar Fields: Stochastic Inflation and Loop Corrections**
P. Adshead, R. Easther and E. A. Lim
Phys. Rev. D **79**, 063504 (2009) [arXiv:0809.4008 [hep-th]]
51. **Fine-tuning criteria for inflation and the search for primordial gravitational waves**
S. Bird, H. V. Peiris and R. Easther
Phys. Rev. D **78**, 083518 (2008) [arXiv:0807.3745 [astro-ph]]
50. **Primordial Black Holes, Eternal Inflation, and the Inflationary Parameter Space after WMAP5**
H. V. Peiris and R. Easther
JCAP **0807**, 024 (2008) [arXiv:0805.2154 [astro-ph]]
49. **Constraining Inflation**
P. Adshead and R. Easther
JCAP **0810**, 047 (2008) [arXiv:0802.3898 [astro-ph]]
48. **Thermal Inflation and the Gravitational Wave Background**
R. Easther, J. T. Giblin, E. A. Lim, W. I. Park and E. D. Stewart
JCAP **0805**, 013 (2008) [arXiv:0801.4197 [astro-ph]]
47. **Generation and Characterization of Large Non-Gaussianities in Single Field Inflation**
X. Chen, R. Easther and E. A. Lim
JCAP **0804**, 010 (2008) [arXiv:0801.3295 [astro-ph]]
46. **Gravitational Waves From the End of Inflation: Computational Strategies**
R. Easther, J. T. Giblin and E. A. Lim
Phys. Rev. D **77**, 103519 (2008) [arXiv:0712.2991 [astro-ph]]

45. **The Eternal Sunshine of the Spotless Mind**
R. Easther and E. A. Lim
JCAP **0801**, 012 (2008) [arXiv:0707.2583 [hep-th]]
44. **Gravitational Wave Production At The End Of Inflation**
R. Easther, J. T. Giblin and E. A. Lim
Phys. Rev. Lett. **99**, 221301 (2007) [arXiv:astro-ph/0612294]
43. **Large non-Gaussianities in single field inflation**
X. Chen, R. Easther and E. A. Lim
JCAP **0706**, 023 (2007) [arXiv:astro-ph/0611645]
42. **Non-gaussianities in multi-field inflation**
T. Battefeld and R. Easther
JCAP **0703**, 020 (2007) [arXiv:astro-ph/0610296]
41. **Slow roll reconstruction: Constraints on inflation from the 3 year WMAP dataset**
H. Peiris and R. Easther
JCAP **0610**, 017 (2006) [arXiv:astro-ph/0609003]
40. **Implications of a running spectral index for slow roll inflation**
R. Easther and H. Peiris
JCAP **0609**, 010 (2006) [arXiv:astro-ph/0604214]
39. **Recovering the Inflationary Potential and Primordial Power Spectrum With a Slow Roll Prior: Methodology and Application to WMAP 3 Year Data**
H. Peiris and R. Easther
JCAP **0607**, 002 (2006) [arXiv:astro-ph/0603587]
38. **Stochastic gravitational wave production after inflation**
R. Easther and E. A. Lim
JCAP **0604**, 010 (2006) [arXiv:astro-ph/0601617]
37. **The Lyth bound and the end of inflation**
R. Easther, W. H. Kinney and B. A. Powell
JCAP **0608**, 004 (2006) [arXiv:astro-ph/0601276]
36. **Random matrices and the spectrum of N-flation**
R. Easther and L. McAllister
JCAP **0605**, 018 (2006) [arXiv:hep-th/0512102]
35. **Cosmology from random multifield potentials**
A. Aazami and R. Easther
JCAP **0603**, 013 (2006) [arXiv:hep-th/0512050]
34. **Counting pockets with world lines in eternal inflation**
R. Easther, E. A. Lim and M. R. Martin
JCAP **0603**, 016 (2006) [arXiv:astro-ph/0511233]
33. **Boundary effective field theory and trans-Planckian perturbations: Astrophysical implications**
R. Easther, W. H. Kinney and H. Peiris
JCAP **0508**, 001 (2005) [arXiv:astro-ph/0505426]
32. **The Hubble slow roll expansion for multi field inflation**
R. Easther and J. T. Giblin
Phys. Rev. D **72**, 103505 (2005) [arXiv:astro-ph/0505033]

31. **Multiple inflation, cosmic string networks and the string landscape**
C. P. Burgess, R. Easther, A. Mazumdar, D. F. Mota and T. Multamaki
JHEP **0505**, 067 (2005) [arXiv:hep-th/0501125]
30. **Observing trans-Planckian signatures in the cosmic microwave background**
R. Easther, W. H. Kinney and H. Peiris
JCAP **0505**, 009 (2005) [arXiv:astro-ph/0412613]
29. **String windings in the early universe**
R. Easther, B. R. Greene, M. G. Jackson and D. Kabat
JCAP **0502**, 009 (2005) [arXiv:hep-th/0409121]
28. **Folded inflation, primordial tensors, and the running of the scalar spectral index**
R. Easther
arXiv:hep-th/0407042
27. **Tuning locked inflation: Supergravity versus phenomenology**
R. Easther, J. Khoury and K. Schalm
JCAP **0406**, 006 (2004) [arXiv:hep-th/0402218]
26. **Evolution of gravitational waves in Randall-Sundrum cosmology**
R. Easther, D. Langlois, R. Maartens and D. Wands
JCAP **0310**, 014 (2003) [arXiv:hep-th/0308078]
25. **Do We Live in a Vanilla Universe? Theoretical Perspectives on WMAP**
R. Easther
AIP Conf. Proc. **698**, 64 (2004) [arXiv:astro-ph/0308160]
24. **Brane gases in the early universe: Thermodynamics and cosmology**
R. Easther, B. R. Greene, M. G. Jackson and D. Kabat
JCAP **0401**, 006 (2004) [arXiv:hep-th/0307233]
23. **Brane gas cosmology in M-theory: Late time behavior**
R. Easther, B. R. Greene, M. G. Jackson and D. Kabat
Phys. Rev. D **67**, 123501 (2003) [arXiv:hep-th/0211124]
22. **Monte Carlo reconstruction of the inflationary potential**
R. Easther and W. H. Kinney
Phys. Rev. D **67**, 043511 (2003) [arXiv:astro-ph/0210345]
21. **A generic estimate of trans-Planckian modifications to the primordial power spectrum in inflation**
R. Easther, B. R. Greene, W. H. Kinney and G. Shiu
Phys. Rev. D **66**, 023518 (2002) [arXiv:hep-th/0204129]
20. **Cosmological string gas on orbifolds**
R. Easther, B. R. Greene and M. G. Jackson
Phys. Rev. D **66**, 023502 (2002) [arXiv:hep-th/0204099]
19. **Imprints of short distance physics on inflationary cosmology**
R. Easther, B. R. Greene, W. H. Kinney and G. Shiu
Phys. Rev. D **67**, 063508 (2003) [arXiv:hep-th/0110226]
18. **Inflation as a probe of short distance physics**
R. Easther, B. R. Greene, W. H. Kinney and G. Shiu
Phys. Rev. D **64**, 103502 (2001) [arXiv:hep-th/0104102]

17. **Inflationary perturbations from a potential with a step**
J. A. Adams, B. Cresswell and R. Easther
Phys. Rev. D **64**, 123514 (2001) [arXiv:astro-ph/0102236]
16. **Fermions, gauge theories, and the Sinc function representation for Feynman diagrams**
D. Petrov, R. Easther, G. Guralnik, S. Hahn and W. M. Wang
Phys. Rev. D **63**, 105001 (2001) [arXiv:hep-ph/0010143]
15. **Attractive forces between global monopoles and domain walls**
S. Alexander, R. H. Brandenberger and R. Easther
arXiv:hep-ph/0008014
14. **The Sinc function representation and three-loop master diagrams**
R. Easther, G. Guralnik and S. Hahn
Phys. Rev. D **63**, 085017 (2001) [arXiv:hep-ph/9912255]
13. **Gravity, parametric resonance and chaotic inflation**
R. Easther and M. Parry
Phys. Rev. D **62**, 103503 (2000) [arXiv:hep-ph/9910441]
12. **Fast evaluation of Feynman diagrams**
R. Easther, G. Guralnik and S. Hahn
Phys. Rev. D **61**, 125001 (2000) [arXiv:hep-ph/9903255]
11. **On the interaction of monopoles and domain walls**
S. Alexander, R. H. Brandenberger, R. Easther and A. Sornborger
arXiv:hep-ph/9903254
10. **Holography, cosmology and the second law of thermodynamics**
R. Easther and D. A. Lowe
Phys. Rev. Lett. **82**, 4967 (1999) [arXiv:hep-th/9902088]
9. **Preheating and the Einstein field equations**
M. Parry and R. Easther
Phys. Rev. D **59**, 061301 (1999) [arXiv:hep-ph/9809574]
8. **Nonsingular dilaton cosmology**
R. H. Brandenberger, R. Easther and J. Maia
JHEP **9808**, 007 (1998) [arXiv:gr-qc/9806111]
7. **Chaotic dynamics and two-field inflation**
R. Easther and K. Maeda
Class. Quant. Grav. **16**, 1637 (1999) [arXiv:gr-qc/9711035]
6. **Vacuum fluctuations in axion-dilaton cosmologies**
E. J. Copeland, R. Easther and D. Wands
Phys. Rev. D **56**, 874 (1997) [arXiv:hep-th/9701082]
5. **One-Loop Superstring Cosmology and the Non-Singular Universe**
R. Easther and K. Maeda
Phys. Rev. D **54**, 7252 (1996) [arXiv:hep-th/9605173]
4. **An Inflationary Model with an Exact Perturbation Spectrum**
R. Easther
Class. Quant. Grav. **13**, 1775 (1996) [arXiv:astro-ph/9511143]
3. **Tree-level String Cosmology**
R. Easther, K. Maeda and D. Wands
Phys. Rev. D **53**, 4247 (1996) [arXiv:hep-th/9509074]

2. **Exact superstring motivated cosmological models**
R. Easter
Class. Quant. Grav. **10**, 2203 (1993) [arXiv:gr-qc/9308010]
1. **Calculating the critical temperature for Coleman-Weinberg GUTs**
R. Easter and W. Moreau
J. Phys. G **18**, 1869 (1992) [arXiv:hep-ph/9208224]