Zhiqi Huang — Curriculum Vitae

Contact Information

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Education

Ph.D. in Department of Astronomy & Astrophysics, University of Toronto (Sept 2005 - Aug 2010)

- Thesis Topic: Probing Early and Late Inflations Beyond Tilted ΛCDM.
- Advisors: Prof. J. Richard Bond & Prof. Lev Kofman
- Area of Study: Cosmology

Master of Science in Department of Astronomy& Astrophysics, Collabrative Astronomy and Astrophysics / Physics / CITA Programme, University of Toronto (March 2006)

- Thesis Topic: Reconstructing dark energy EOS
- Advisor: Prof. Charles Dyer
- Area of Study: Cosmology, General Relativity

Bachelor of Science in Department of Physics, Peking University (June 2004)

- Major: Physics
- Advisor: Prof. Zhongshui Ma

Awards and Honors

Scholarships/Fellowships

- The Eurotalent fellowship, 2010-2012
- The Carl Reinhardt Fellowship in Astronomy, 2008
- The Frank S.Hogg Memorial Fellowship, 2007
- The Shirley Jones Fellowship, 2006
- The Frank S.Hogg Memorial Fellowship, 2006
- The C.A. Chant Fellowship, 2005
- The Carl Reinhardt Fellowship in Astronomy, 2005
- The Guanghua Fellowship, 2002
- New Student Scholarship, 2000

Awards

- Gold Medal at the fifteenth Chinese Mathematics Olympiad (CMO 2000)

Research Publications

1. Z. Huang, "The Art of Lattice and Gravity Waves from Preheating", Phys. Rev. D 83, 123509 (2011) arXiv:1102.0227.
2. Z. Huang, J. R. Bond and L. Kofman, "Parameterizing and Measuring Dark Energy Trajectories from Late-Inflatons", ApJ **726** 64 (2011), arXiv:1007.5297.
3. Neil Barnaby and Zhiqi Huang, "Particle Production During Inflation: Observational Constraints and Signatures", Phys. Rev. D **80** 126018 (2009), arXiv:0909.0751
4. Neil Barnaby, J. Richard Bond, Zhiqi Huang, Lev Kofman, "Preheating After Modular Inflation", JCAP **0912** 021 (2009), arXiv:0909.0503.
5. J. Richard Bond, Andrei V. Frolov, Zhiqi Huang, Lev Kofman, "Non-Gaussian Spikes from Chaotic Billiards in Inflation Preheating", Phys. Rev. Lett. **103**, 071301 (2009); arXiv:0903.3407.
6. Neil Barnaby, Zhiqi Huang, Lev Kofman, Dmitry Pogosian, "Cosmological fluctuations from infra-red cascading during inflation", Phys. Rev. D **80**, 043501 (2009); arXiv:0902.0615.
7. Santiago De Lope Amigo, William Man-Yin Cheung, Zhiqi Huang, Siew-Phang Ng, "Cosmological Constraints on Decaying Dark Matter", JCAP **0906** 005 (2009), arXiv: 0812.4016

Academic Experience

Postdoc: Institut de Physique Théorique, CEA/Saclay, 2010 Oct - present

Referee: The Journal of Cosmology and Astroparticle Physics (JCAP); The Astrophysical Journal (ApJ)

Organizer: cosmology theory journal club at IPhT, CEA/Saclay (2010 Oct - present).

Teaching assistant University of Toronto (2004 - 2010)

Research assistant to J. Richard Bond & Lev Kofman, 2005 - 2010

Conferences Organized

CITA@25/Bond@60, the 19$^{\text{th}}$ Kingston Meeting, CITA, University of Toronto, May 2010

Conferences and Workshops attended

The Dark Universe, Oct 2011, Heidelberg

COSMO 10, Sept 2011, Porto

IPhT/LPT COSMO meeting, Dec 2010, Université Paris-Sud 11, Orsay

CITA@25/Bond@60, the 19$^{\text{th}}$ Kingston Meeting, CITA, University of Toronto, May 2010

COSMO 09, CERN, Sept 2009

Particle Cosmology workshop, CERN, Sept 2009

CASCA, University of Toronto, May 2009

The TEXAS Symposium on Relativistic Astrophysics, Vancouver, Dec 2008

COSMO 08, Aug 2008, Madison

Workshop on Parallel Computing in Astrophysics, University of Toronto, July 2008

Upcoming Lensing Surveys: Beyond the Obvious, University of Toronto, June 2008

String Theory and Cosmology, Kavli Institute for Theoretical Physics China, Nov 2007

COSMO 07, Aug 2007, Sussex

CITA-PI day, CITA & Perimeter Institute, 2007-2009

CITA-DAA day, University of Toronto, 2008-2009

Technical Talks

Future LSS Survey and Inflation Models

- The Dark Universe, HeidelBerg, Oct 2011

Future LSS Survey and Inflation Models

- Seminar, IPhT CEA/Saclay, Oct 2011

The Dark Energy Trajectories in the post-EUCLID era

- CITA seminar, Toronto, April 2011

The Art of Lattice and Gravity Waves from Preheating

- IPhT/LPT COSMO meeting, Université Paris-Sud 11, Orsay, Dec 2010

Dark Energy Trajectories and Cosmic Observables

- CITA@25/Bond@60, CITA, University of Toronto, May 2010

Primordial Power Spectra and Cosmological Observations

- CITA-PI day, Perimeter Institute, Waterloo, Dec 2009

Non-Gaussianity from Preheating

- Graduate Student Seminar Talk, University of Toronto, Sept 2009

Non-Gaussian Spikes from Chaotic Billiards in Inflation Preheating

- Contributed talk at the Particle Cosmology workshop, CERN, Sept 2009

Non-Gaussian Spikes from Chaotic Billiards in Inflation Preheating

- Contributed talk at CASCA 2009

Non-Gaussianity from Preheating

- Contributed talk at the TEXAS Symposium 2008

Constraining Lifetime of Dark Matter Particles

- Graduate Student Seminar talk, University of Toronto, Nov 2008

Parameterizing Dark Energy

- Invited colloquium talk, Case Western Reserve University, Sept 2008

Parameterizing Dark Energy

- Contributed talk at COSMO, University of Sussex, Aug 2007

A new $w(a)$ parametrization

- Graduate Student Seminar talk, University of Toronto, Jan 2007

Outreach

Telescope Operator, Nuit Blanche Exhibitions in Toronto, Oct 2009

Public talks in Downtown Astronomy monthly **public tour** organized by Department of Astronomy & Astrophysics at University of Toronto.

- *Modern Cosmological Observations* (Dec 2007)
- *The History of Gravity* (Dec 2006)

Skills

Rich parallel (MPI and OpenMP) programming experience in C and Fortran.

Dynamic website design and html, javascript, and PHP + MySQL database programming.

Familiar with many statistical approaches: Markov Chain Monte Carlo simulation; Fisher Matrix analysis; and model selection through Bayesian evidence analysis.