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EDUCATION

Ph.D. in Physics
The University of Tokyo, Department of Physics
Advisor: Masahiro Kawasaki
March 2017

Master of Science in Physics
The University of Tokyo, Department of Physics
Advisor: Hitoshi Murayama
March 2014

Bachelor of Science in Physics
The University of Tokyo, Department of Physics
March 2012

RESEARCH INTEREST

Cosmological perturbation

- ◇ Inflation
  — stochastic effect, δN formalism, non-Gaussianity
- ◇ Primordial Black Hole
  — gravitational waves from binary PBHs, bias/cluster effect
- ◇ Cosmic microwave background anisotropies
  — adiabatic/isocurvature perturbation, spectral distortion
- ◇ Small scale perturbation
  — second order effect on big-bang nucleosynthesis

Particle cosmology

- ◇ Inflation
  — realization in supergravity, grand unified theory, modified gravity
- ◇ Helical particle production
  — inflationary magnetogenesis, helical gravitational waves, lepto/baryogenesis

PUBLICATIONS

1. K. Inomata, M. Kawasaki, K. Mukaida, **Y. Tada** and T. T. Yanagida, *Inflationary Primordial Black Holes as All Dark Matter*, arXiv:1701.02544 [astro-ph.CO].
2. K. Inomata, M. Kawasaki, K. Mukaida, **Y. Tada** and T. T. Yanagida, *Inflationary primordial black holes for the LIGO gravitational wave events and pulsar timing array experiments*, arXiv:1611.06130 [astro-ph.CO].
3. **Y. Tada** and V. Vennin, *Squeezed Bispectrum in the δN Formalism: Local Observer Effect in Field Space*, arXiv:1609.08876 [astro-ph.CO].
4. M. Kawasaki, A. Kusenko, **Y. Tada** and T. T. Yanagida, *Primordial black holes as dark matter in supergravity inflation models*, Phys. Rev. D 94, no. 8, 083523 (2016) [arXiv:1606.07631 [astro-ph.CO]].

5. K. Inomata, M. Kawasaki and **Y. Tada**, *Revisiting constraints on small scale perturbations from big-bang nucleosynthesis*, Phys. Rev. D 94, no. 4, 043527 (2016) [arXiv:1605.04646 [astro-ph.CO]].
6. M. Kawasaki and **Y. Tada**, *Can massive primordial black holes be produced in mild waterfall hybrid inflation?*, JCAP 1608, no. 08, 041 (2016) [arXiv:1512.03515 [astro-ph.CO]].
7. T. Fujita, R. Namba, **Y. Tada**, N. Takeda and H. Tashiro, *Consistent generation of magnetic fields in axion inflation models*, JCAP 1505, no. 05, 054 (2015) [arXiv:1503.05802 [astro-ph.CO]].
8. **Y. Tada** and S. Yokoyama, *Primordial black holes as biased tracers*, Phys. Rev. D 91, no. 12, 123534 (2015) [arXiv:1502.01124 [astro-ph.CO]].
9. A. Ota, T. Sekiguchi, **Y. Tada** and S. Yokoyama, *Anisotropic CMB distortions from non-Gaussian isocurvature perturbations*, JCAP 1503, no. 03, 013 (2015) [arXiv:1412.4517 [astro-ph.CO]].
10. T. Fujita, M. Kawasaki and **Y. Tada**, *Non-perturbative approach for curvature perturbations in stochastic δN formalism*, JCAP 1410, no. 10, 030 (2014) [arXiv:1405.2187 [astro-ph.CO]].
11. T. Fujita, M. Kawasaki, **Y. Tada** and T. Takesako, *A new algorithm for calculating the curvature perturbations in stochastic inflation*, JCAP 1312, 036 (2013) [arXiv:1308.4754 [astro-ph.CO]].

TALKS

Conference/Workshop Talks

1. *Squeezed Bispectrum in the delta N Formalism without Gauge Artifact*

   The 26th Workshop on General Relativity and Gravitation in Japan (JGRG26)
   Osaka City University — October 2016

2. *PBH Dark Matter in Supergravity Inflation Models*

   Autumn Meeting of the Physical Society of Japan
   University of Miyazaki — September 2016

   APCosPA-Planet^2 RESCEU Summer School
   Gifu, Japan — August 2016

3. *Can massive primordial black holes be produced in mild waterfall hybrid inflation?*

   Matsue Conference on Particle Physics
   Shimane University — March 2016

   Second LeCosPA International Symposium “Everything about Gravity”
   Leung Center for Cosmology and Particle Astrophysics (LeCosPA), National Taiwan University — December 2015

   Autum Meeting of the Physical Society of Japan
   Osaka City University — September 2015

4. *Primordial black holes as biased tracers*

   The 19th annual International Conference on Particle Physics and Cosmology (COSMO-15)
   University of Warsaw — September 2015

   Annual Meeting of the Physical Society of Japan
   Waseda University — March 2015

5. *Non-perturbative approach for curvature perturbations in stochastic-delta N formalism*

   Autumn Meeting of the Physical Society of Japan
   Saga University — September 2014

   The 18th annual International Conference on Particle Physics and Cosmology (COSMO-14)
   The University of Chicago — August 2014

6. *A new algorithm for calculating the curvature perturbations in stochastic inflation*

KEK Theory Meeting on Particle Physics Phenomenology (KEK-PH2013 FALL)
High Energy Accelerator Research Organization (KEK) October 2013

Autumn Meeting of the Physical Society of Japan
Kochi University September 2013

Research Seminars

1. *Primordial Black Hole, Dark Matter, and LIGO's Gravitational Wave Event*

Astrophysics & Cosmology Group, Waseda University December 2016

2. *Stochastic-delta N formalism and massive primordial black hole formation in hybrid inflation*

Institute of Cosmology and Gravitation, University of Portsmouth June 2016
High Energy Physics Theory Group, The University of Tokyo April 2016
Theoretical Astrophysics Group, Kyoto University March 2016
High Energy Accelerator Research Organization (KEK) January 2016

3. *Can massive primordial black holes be produced in mild waterfall hybrid inflation?*
Research Center for the Early Universe (RESCEU), The University of Tokyo February 2016

4. *Stochastic-deltaN formalism and primordial black holes in hybrid inflation*

Institut Astrophysique de Paris September 2015
Theoretical Physics Group, University of Padova September 2015

5. *Primordial black holes as biased tracers*

Cosmology Group, Nagoya University June 2015

Joint seminar of gravity and cosmology
Kavli Institute for the Physics and Mathematics of the Universe February 2015

6. *Stochastic-δN formalism*
Astroparticle Physics and Cosmology Group, University of Helsinki August 2014

PROFESSIONAL ACTIVITIES

Referee

Progress of Theoretical and Experimental Physics (PTEP)

AWARDS AND HONORS

Poster Award July 2015
The 45th Summer School on Astronomy and Astrophysics
Nagano, Japan

Poster Award July 2013
The 43rd Summer School on Astronomy and Astrophysics
Nagano, Japan

REFEREES

Prof. Masahiro Kawasaki
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Prof. Hitoshi Murayama
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of the Universe, The University of Tokyo
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Prof. Jun'ichi Yokoyama
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