Yuichiro Tada

Curriculum Vitae

Institut d'Astrophysique de Paris
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Employment

April 2017– **Post-Doctoral Researcher**, *Institut d'Astrophysique de Paris, UMR-7095 du CNRS, Université Pierre et Marie Curie & Sorbonne Universités, Institut Lagrange de Paris*.

Education

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

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

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

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. T. Fujita, R. Namba and **Y. Tada**, *Does the detection of primordial gravitational waves exclude low energy inflation?*, arXiv:1705.01533 [astro-ph.CO].
2. 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].
3. 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*, Phys. Rev. D 95, no. 12, 123510 (2017) [arXiv:1611.06130 [astro-ph.CO]].
4. **Y. Tada** and V. Vennin, *Squeezed Bispectrum in the δN Formalism: Local Observer Effect in Field Space*, JCAP 1702, no. 02, 021 (2017) [arXiv:1609.08876 [astro-ph.CO]].
5. 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]].
6. 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]].
7. 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]].
8. 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]].
9. **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]].
10. 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]].
11. 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]].
12. 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. *Primordial Black Hole, Dark Matter, and Gravitational Wave*
   - Gordon Research Conference & Seminars "String Theory & Cosmology", *Renaissance Tuscany Il Ciocco, Lucca (Barga), Italy*, May 2017
2. *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
3. *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
4. *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
5. *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
6. *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
7. *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

Seminars

1. *Primordial Black Hole, Dark Matter, and LIGO's Gravitational Wave Event*
   - Institut Astrophysique de Paris, April 2017
   - 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.
European Physical Journal C (EPJC), Progress of Theoretical and Experimental Physics (PTEP)

Awards and Honors

March 2017 Presentation Award, *ICRR Master and Doctor Thesis Workshop*, Institute for Cosmic Ray Research, The University of Tokyo

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

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

Referees

Prof. Masahiro Kawasaki
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