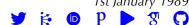
Yuichiro Tada

Curriculum Vitae

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Employment & Fellowship

Apr. 2019– Part-time Lecturer, Daido University, Nagoya, Japan.

Present Classical mechanics 1, 2

Apr. 2018– JSPS Fellow PD, Nagoya University, Nagoya, Japan.

Present Cosmology group

Apr. 2017 – Post-Doctoral Researcher, Institut d'Astrophysique de Paris, Paris, France.

Mar. 2018 Dr. Sébastien Renaux-Petel's Group

Apr. 2015– JSPS Fellow DC2, The University of Tokyo, Chiba, Japan.

Mar. 2017 Kavli IPMU & ICRR

Oct. 2012 - ALPS Fellow, The University of Tokyo, Chiba, Japan.

Mar. 2017 Kavli IPMU & ICRR

Education

23rd Mar. Ph.D. in physics, The University of Tokyo, Chiba, Japan.

2017 Department of Physics. Advisor: Masahiro Kawasaki, Hitoshi Murayama

24th Mar. Master of Science in physics, The University of Tokyo, Tokyo, Japan.

2014 Department of Physics. Advisor: Masahiro Kawasaki, Hitoshi Murayama

23rd Mar. **Bachelor of Science in physics**, *The University of Tokyo*, Tokyo, Japan.

2012 Department of Physics

Research Interest

Inflation

- stochastic effect, δN formalism, non-Gaussianity
- supergravity, grand unified theory, modified gravity
- curved target space

Primordial Black Hole

- gravitational waves, bias/cluster effect

Helical Particle Production

- inflationary magnetogenesis, helical gravitational waves, lepto/baryogenesis

Publications

- 20. T. Suyama, Y. Tada and M. Yamaguchi, Local observer effect on the cosmological soft theorem, [arXiv:2008.13364 [astro-ph.CO]].
- 19. L. Pinol, S. Renaux-Petel and Y. Tada, **A manifestly covariant theory of multifield stochastic inflation in phase space**, [arXiv:2008.07497 [astro-ph.CO]].
- 18. Y. Mikura, Y. Tada and S. Yokoyama, **Conformal inflation in the metric-affine geometry**, [arXiv:2008.00628 [hep-th]].
- 17. K. Kogai and Y. Tada, **Escape from the swampland with a spectator field**, Phys. Rev. D **101**, no.10, 103514 (2020) [arXiv:2003.06753 [astro-ph.CO]].
- 16. N. Kitajima, Y. Tada and F. Takahashi, **Stochastic inflation with an extremely large number of** *e***-folds**, Phys. Lett. B **800**, 135097 (2020) [arXiv:1908.08694 [hep-ph]].
- 15. Y. Tada and S. Yokoyama, **Primordial black hole tower: Dark matter, earth-mass, and LIGO black holes**, Phys. Rev. D **100**, no. 2, 023537 (2019) [arXiv:1904.10298 [astro-ph.CO]].
- 14. L. Pinol, S. Renaux-Petel and Y. Tada, **Inflationary stochastic anomalies**, Class. Quant. Grav. **36**, no. 7, 07LT01 (2019) [arXiv:1806.10126 [gr-qc]].
- K. Inomata, M. Kawasaki, K. Mukaida, Y. Tada and T. T. Yanagida, O(10)M_☉ primordial black holes and string axion dark matter, Phys. Rev. D 96, no. 12, 123527 (2017) [arXiv:1709.07865 [astro-ph.CO]].
- 12. T. Fujita, R. Namba and Y. Tada, **Does the detection of primordial gravitational waves exclude low energy inflation?**, Phys. Lett. B **778**, 17 (2018) [arXiv:1705.01533 [astro-ph.CO]].
- 11. K. Inomata, M. Kawasaki, K. Mukaida, Y. Tada and T. T. Yanagida, Inflationary Primordial Black Holes as All Dark Matter, Phys. Rev. D 96, no. 4, 043504 (2017) [arXiv:1701.02544 [astro-ph.CO]].
- 10. 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]].
- 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]].
- 8. 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]].
- 7. 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]].
- 5. 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]].
- 4. 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]].
- 3. 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]].
- 2. 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]].
- 1. 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]].

Ph.D. thesis **Curvature Perturbations and Primordial Black Hole Formation in the Inflationary Universe**.

Department of Physics, The University of Tokyo, Bunkyo-ku, Tokyo 113-0033, Japan Kavli Institute for the Physics and Mathematics of the Universe (WPI), UTIAS, The University of Tokyo, 5-1-5 Kashiwanoha, Kashiwa, Chiba 277-8583, Japan Institute for Cosmic Ray Research, The University of Tokyo, 5-1-5 Kashiwanoha, Kashiwa, Chiba 277-8582, Japan

Master thesis The stochastic approach to the inflationary universe (in Japanese).

Department of Physics, The University of Tokyo, Bunkyo-ku, Tokyo 113-0033, Japan Kavli Institute for the Physics and Mathematics of the Universe (WPI), UTIAS, The University of Tokyo, 5-1-5 Kashiwanoha, Kashiwa, Chiba 277-8583, Japan

Conferences

- 20th Aug. Manifestly covariant theory of stochastic inflation, *The 14th International Confer-* 2020 ence on *Gravitation*, *Astrophysics and Cosmology (ICGAC14)*, National Central University, Taiwan (Web Conference), L. Pinol, S. Renaux-Petel, Y. Tada, V. Vennin. oral, refereed
- 6th Dec. **Primordial black hole tower: Dark matter, earth-mass, and LIGO black holes**, Fo-2019 cus Week on Primordial Black Holes, Kavli IPMU, Y. Tada and S. Yokoyama. oral, refereed
- 27th Nov. **Stochastic inflation with an extremely large number of e-folds**, *The 29th Workshop on General Relativity and Gravitation in Japan (JGRG29)*, Kobe University, N. Kitajima, Y. Tada, and F. Takahashi. oral, refereed

- 19th Nov. **Stochastic approach to non-Gaussianity**, *Theoretical aspects of non-Gaussianity* 2019 *from modern perspectives*, Kyoto University, Y. Tada and V. Vennin. oral, refereed
- 16th Oct. **Primordial black hole tower: Dark matter, earth-mass, and LIGO black holes**, *Gravitational Wave Physics and Astronomy Workshop (GWPAW 2019)*, The University of Tokyo, Y. Tada and S. Yokoyama. oral, refereed
- 4th Sep. **Primordial black hole tower: Dark matter, earth-mass, and LIGO black holes**, 2019 *COSMO19*, Aachen University, Y. Tada and S. Yokoyama. poster, refereed
- 16th Aug. **Primordial black hole tower: Dark matter, earth-mass, and LIGO black holes**, *15th* 2019 *Rencontres du Vietnam "COSMOLOGY"*, ICISE, Y. Tada and S. Yokoyama. oral, invited
- 13th Jun. **Stochastic formalism and curvature perturbation**, *3-day workshop: INFLATION* 2019 *AND GEOMETRY*, IAP, T. Fujita, L. Pinol, S. Renaux-Petel, Y. Tada, J. Tokuda, and V. Vennin. oral, invited
- 15th May **PBH tower in multi-phase inflation**, 2-day mini-workshop: Axion Cosmology, Kyoto University, Y. Tada and S. Yokoyama. oral, refereed
 - 3rd Apr. PBH tower in multi-phase inflation, Future Perspective in Cosmology and Gravity,
 2019 Nagoya University, Y. Tada and S. Yokoyama.
 oral, refereed
 - 7th Mar. **PBH tower in multi-phase inflation**, Accelerating Universe in the Dark, Kyoto Uni-2019 versity, Y. Tada and S. Yokoyama. oral, refereed
- 19th Feb. **Aspects of primordial black hole as dark matter**, FAPESP-JSPS Workshop on dark 2019 energy, dark matter, and galaxies, University of Sao Paulo, K. Inomata, M. Kawasaki, A. Kusenko, K. Mukaida, Y. Tada, T. T. Yanagida, and S. Yokoyama. oral, refereed
- 8th Nov. **Stochastic formalism and curvature perturbations**, *The 28th Workshop on General* 2018 *Relativity and Gravitation in Japan (JGRG28)*, Rikkyo University, T. Fujita, L. Pinol, S. Renaux-Petel, Y. Tada, and J. Tokuda. oral, refereed
- 10th Aug. **Stochastic inflation in a general field space**, *International Conference on Modified* 2018 *Gravity 2018 (MOGRA 2018)*, Nagoya University, T. Fujita, L. Pinol, S. Renaux-Petel, Y. Tada, and J. Tokuda. oral, refereed

- 5th Jul. 2018 **Stochastic inflation in a general field space**, *Fifteenth Marcel Grosmann Meeting*, University of Rome "La Sapienza", T. Fujita, L. Pinol, S. Renaux-Petel, Y. Tada, and J. Tokuda. oral, refereed
 - 20th–21st **Subtleties in stochastic formalism Ito vs. Stratonovich**, *Infrared physics of gauge*Jan. 2018 *theories and quantum dynamics of inflation*, Shiga, L. Pinol, S. Renaux-Petel, and Y. Tada.
 oral, refereed
 - 28th Aug.— **Stochastic Formalism in Curved Field Space**, *The 21st annual International Confer*-1st Sep. *ence on Particle Physics and Cosmology (COSMO-17)*, The Universite Paris Diderot site, Amphitheatre Buffon, L. Pinol, S. Renaux-Petel, and Y. Tada. oral, refereed
 - 27th May–
 2nd Jun. Conference & Seminars "String Theory & Cosmology", Renaissance Tuscany Il
 2017 Ciocco, Lucca (Barga), Italy, K. Inomata, M. Kawasaki, A. Kusenko, K. Mukaida, Y. Tada, and T. T. Yanagida.
 poster, refereed
 - 24th–28th Squeezed Bispectrum in the delta N Formalism without Gauge Artifact, The 26th Oct. 2016 Workshop on General Relativity and Gravitation in Japan (JGRG26), Osaka City University, Y. Tada and V. Vennin. oral, refereed
 - 24th–28th **PBH Dark Matter in Supergravity Inflation Models**, *RESCEU Summer School*, Gifu, Aug. 2016 M. Kawasaki, A. Kusenko, Y. Tada, and T. T. Yanagida. oral, not refereed
 - 14th–18th Can massive primordial black holes be produced in mild waterfall hybrid inflation?,
 Dec. 2015 Second LeCosPA International Symposium "Everything About Gravity", National Taiwan University, M. Kawasaki and Y. Tada.
 oral, refereed
- 7th–11th Sep. **PRIMORDIAL BLACK HOLES AS BIASED TRACERS**, International Conference on 2015 Particle Physics and Cosmology (COSMO-15), The University of Warsaw, Y. Tada and S. Yokoyama. oral, refereed
 - 25th–29th Non-perturbative approach for curvature perturbations in stochastic-delta N for-Aug. 2014 malism, International Conference on Particle Physics and Cosmology (COSMO 2014), The Kavli Institute for Cosmological Physics (KICP), The University of Chicago, T. Fujita, M. Kawasaki, and Y. Tada. poster, refereed
 - 30th Sep.— A new algorithm for calculating the curvature perturbations in stochastic inflation, 3rd Oct. KEK Theory Meeting on Particle Physics Phenomenology (KEK-PH2013 FALL), KEK, 2013 T. Fujita, M. Kawasaki, Y. Tada, and T. Takesako. oral, refereed

Seminars

- 7th Jun. Aspects of primordial black holes and implication to multi-phase inflation, IRAP,
 - 2019 Toulouse, K. Inomata, M. Kawasaki, A. Kusenko, K. Mukaida, Y. Tada, T. T. Yanagida, and S. Yokoyama.
- 23rd May Aspects of primordial black holes and implication to multi-phase inflation, Tohoku
 - 2019 *University*, Miyagi, K. Inomata, M. Kawasaki, A. Kusenko, K. Mukaida, Y. Tada, T. T. Yanagida, and S. Yokoyama. invited
- 26th Jun. **Stochastic inflation in a general field space**, Laboratoire Astroparticule et Cosmolo-
 - 2018 gie, Paris, T. Fujita, L. Pinol, S. Renaux-Petel, Y. Tada, and J. Tokuda.
- 20th Sep. Stochastic Formalism in Curved Field Space, Nagoya University, Aichi, L. Pinol, S.
 - 2017 Renaux-Petel, and Y. Tada.
- 19th Sep. Stochastic Formalism in Curved Field Space, Kobe University, Hyogo, L. Pinol, S.
 - 2017 Renaux-Petel, and Y. Tada.
- 4th Sep. Stochastic Formalism in Curved Field Space, RESCEU, Tokyo, L. Pinol, S. Renaux-
 - 2017 Petel, and Y. Tada.
- 20th Apr. Primordial Black Hole, Dark Matter, and LIGO's Gravitational Wave Event, Institut
 - 2017 Astrophysique de Paris, Paris, K. Inomata, M. Kawasaki, A. Kusenko, K. Mukaida, Y. Tada, and T. T. Yanagida.
- 16th Dec. Primordial Black Hole, Dark Matter, and LIGO's Gravitational Wave Event, Waseda
 - 2016 *University*, Tokyo, K. Inomata, M. Kawasaki, A. Kusenko, K. Mukaida, Y. Tada, and T. T. Yanagida. invited
- 22nd Jun. Stochastic-delta N formalism and massive primordial black hole formation in hy-
 - 2016 **brid inflation**, *Institute of Cosmology and Gravitation*, Portsmouth, M. Kawasaki and Y. Tada.
- 18th Apr. Stochastic-delta N formalism and massive primordial black holes in hybrid infla-
 - 2016 **tion**, *The University of Toyko*, Tokyo, M. Kawasaki and Y. Tada. invited
- 29th Mar. Stochastic-delta N formalism and massive primordial black holes in hybrid infla-
 - 2016 tion, Kyoto University, Kyoto, M. Kawasaki and Y. Tada.
- 29th Feb. Can massive primordial black holes be produced in mild waterfall hybrid inflation?,
 - 2016 *RESCEU*, Tokyo, M. Kawasaki and Y. Tada. invited
- 27th Jun. Stochastic-delta N formalism and massive primordial black holes in hybrid infla-
 - 2016 **tion**, KEK, Ibaraki, M. Kawasaki and Y. Tada.
- 14th-18th Stochastic-deltaN formalism and primordial black holes in hybrid inflation, Uni-
- Sep. 2015 versity of Padova, Padova, M. Kawasaki and Y. Tada.

- 21th Sep. Stochastic-deltaN formalism and primordial black holes in hybrid inflation, Institut
 - 2015 Astrophysique de Paris, Paris, M. Kawasaki and Y. Tada.
- 16th Feb. **Primordial black holes as biased tracers**, Joint seminar of gravity and cosmology @
 - 2015 *IPMU*, Chiba, Y. Tada and S. Yokoyama.
- 19th Aug. **Stochastic-**δN **formalism**, Helsinki University, Helsinki, T. Fujita, M. Kawasaki, Y.
 - 2014 Tada, and T. Takesako.

Activities

- 1st Oct. Study abroad, Helsinki University, Prof. Enqvist group.
- 22 Dec. coursework of ALPS fellowship

2014

Peer review.

European Physical Journal C (EPJC), Journal of Cosmology and Astroparticle Physics (JCAP), Modern Physics Letters A (MPLA), Physical Review D (PRD), Progress of Theoretical and Experimental Physics (PTEP), Universe

Science member, International Research Network Extragalactic astrophysics and Cosmology (NECO).

Awards and Honors

- Feb. 2019 **Young representative speaker**, FAPESP-JSPS Workshop on dark energy, dark matter, and galaxies.
- 24th Mar. **Director's Award**, *ICRR Master and Doctor Thesis Workshop*, Institute for Cosmic 2017 Ray Research, The University of Tokyo.

Funding

- 1st Apr. **JSPS Grant-in-Aid for Early-Career Scientists**, Aspects of gravity and quantum the-2019–31st ory in the stochastic formalism.
- Mar. 2021 No. 19K14707, Principal Investigator, ¥1,560,000
- 25th Apr. Grant-in-Aid for JSPS Fellows, Curvature Perturbations and Primordial Black Hole
- 2018–31st Formation in the Inflationary Universe.
- Mar. 2021 No. 18J01992, JSPS Fellow (PD), ¥3,640,000