# PUBLICATIONS

August 7, 2019

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**Note:** In my field (High energy physics and Cosmology), relevant achievements are papers published in journals. Impact factors are similar for typical journals such as Physical Review D (PRD), Physics Letters B (PLB), Journal of Cosmology and Astroparticle Physics (JCAP) and Journal of High Energy Physics (JHEP), except for Physical Review Letter (PRL). The order of author's names is mostly alphabetical except for [10] and [8]. $*$ is put for papers which I joined as a co-author. A paper posted on the arXiv is commonly considered published, so I add my latest works although they are still under peer review.

## PAPERS IN PUBLICATION

[12] M. Hongo, S. Kim, T. Noumi and A. Ota, "Effective Lagrangian for Nambu-Goldstone modes in nonequilibrium open systems," arXiv:1907.08609 [hep-th].

[11] S. Saga, **A. Ota**$^*$, H. Tashiro and S. Yokoyama, "Secondary CMB temperature anisotropies from magnetic reheating," arXiv:1904.09121 [astro-ph.CO], **submitted to MNRAS**.

[10] **A. Ota**, "Statistical anisotropy in CMB spectral distortions," Phys. Lett. B **790**, 243 (2019) doi:10.1016/j.physletb.2019.01.030 [arXiv:1810.03928 [astro-ph.CO]].

[9] **A. Ota** and N. Bartolo, "CMB spectroscopy at third-order in cosmological perturbations," arXiv:1808.10517 [astro-ph.CO], **submitted to PRL**.

[8] M. Hongo, S. Kim, T. Noumi and **A. Ota**, "Effective field theory of time-translational symmetry breaking in nonequilibrium open system," JHEP **1902**, 131 (2019) doi:10.1007/JHEP02(2019)131 [arXiv:1805.06240 [hep-th]].

[7] T. Haga, K. Inomata, **A. Ota** and A. Ravenni, "Exploring compensated isocurvature perturbations with CMB spectral distortion anisotropies," JCAP **1808**, no. 08, 036 (2018) doi:10.1088/1475-7516/2018/08/036 [arXiv:1805.08773 [astro-ph.CO]]. 2 citations counted in INSPIRE as of 28 Aug 2018

[6] **A. Ota** and M. Yamaguchi, "Secondary isocurvature perturbations from acoustic reheating," JCAP **1806**, no. 06, 022 (2018) doi:10.1088/1475-7516/2018/06/022 [arXiv:1705.05196 [astro-ph.CO]].

[5] **A. Ota**, "CMB spectral distortions as solutions to the Boltzmann equations," JCAP **1701**, no. 01, 037 (2017) doi:10.1088/1475-7516/2017/01/037 [arXiv:1611.08058 [astro-ph.CO]]. 3 citations counted in INSPIRE as of 19 Aug 2018

[4] **A. Ota**, "Cosmological constraints from $\mu E$ cross-correlations," Phys. Rev. D **94**, no. 10, 103520 (2016) doi:10.1103/PhysRevD.94.103520 [arXiv:1607.00212 [astro-ph.CO]]. 7 citations counted in INSPIRE as of 19 Aug 2018

[3] A. Naruko, **A. Ota** and M. Yamaguchi, "Probing small-scale non-Gaussianity from anisotropies in acoustic reheating," JCAP **1505**, no. 05, 049 (2015) doi:10.1088/1475-7516/2015/05/049 [arXiv:1503.03722 [astro-ph.CO]]. 6 citations counted in INSPIRE as of 19 Aug 2018

[2] **A. Ota**, T. Sekiguchi, Y. Tada and S. Yokoyama, "Anisotropic CMB distortions from non-Gaussian isocurvature perturbations,"
JCAP **1503**, no. 03, 013 (2015) doi:10.1088/1475-7516/2015/03/013 [arXiv:1412.4517 [astro-ph.CO]]. 9 citations counted in INSPIRE as of 19 Aug 2018

[1] **A. Ota**, T. Takahashi, H. Tashiro and M. Yamaguchi, "CMB $\mu$ distortion from primordial gravitational waves," JCAP **1410**, no. 10, 029 (2014) doi:10.1088/1475-7516/2014/10/029 [arXiv:1406.0451 [astro-ph.CO]]. 14 citations counted in INSPIRE as of 19 Aug 2018

## COLLABORATIONS

[1] J. Chluba *et al.*, "Spectral Distortions of the CMB as a Probe of Inflation, Recombination, Structure Formation and Particle Physics," arXiv:1903.04218 [astro-ph.CO].

## PRESENTATIONS

*Invited talks*

[2] "CMB spectroscopy for primordial non-Gaussianity", Probing fundamental physics with CMB spectral distortions, CERN, Switzerland, 03/2018

[1] "CMB $\mu$ distortion from primordial gravitational waves", Mini-Workshop on Cosmology, Asia Pacific Center of Theoretical Physics, Korea, 12/2014

*Conference talks (International)*

[8] "Statistical anisotropy in CMB spectral distortions", Accelerating Universe in the Dark, Kyoto, Japan, 03/2019

[7] "Effective field theory of time-translational symmetry breaking in open systems", Infrared physics of gauge theories and quantum dynamics of inflation, Shiga, Japan, 01/2018

[6] "Spontaneous symmetry breaking in open systems: Toward application to EFT of inflation", The 27th Workshop on General Relativity and Gravitation, Hiroshima, Japan 11/2017

[5] "Cosmological constraints from $\mu$E cross-correlations", The 26th Workshop on General Relativity and Gravitation, Osaka City University, Japan, 10/2016

[4] "Cosmological constraints from $\mu$E cross-correlations", Summer School on Symmetries, Fundamental Interactions and Cosmology 2016, Germany, 09/2016

[3] "Cosmological constraints from $\mu$E cross-correlations", RESCUE Summer school, Nagano, Japan, 08/2016

[2] "CMB $\mu$ distortion from primordial gravitational waves" The 24th Workshop on General Relativity and Gravitation, Kavli Institute for Physics and Mathematics of the Universe, Tokyo, Japan 11/2014

[1] "CMB $\mu$ distortion from primordial gravitational waves" Research Center of the Early Universe Summer school, Nagano Japan, 08/2014

*Conference talks (in Japanese)*

[3] "Secondary isocurvature perturbations from acoustic reheating", JPS conference, 09/2017

[2] "CMB spectral distortions as solutions of the Boltzmann equation", JPS conference, 03/2017

[1] Other three JPS presentations, titles are in Japanese.

*Seminar talks*

[20] "Statistical anisotropy in spectral distortions", Queen Mary University of London, 05/2019

[19] "Statistical anisotropy in spectral distortions", Nagoya University, 03/2019

[18] "Statistical anisotropy in spectral distortions", University of Sussex, 12/2018

[17] "CMB spectral distortions in the framework of cosmological perturbation theory", Manchester University, 11/2018

[16] "Statistical anisotropy in spectral distortions", ICG Portsmouth, 10/2018

[15] "EFT of dissipative fluid: an application to cosmology", The Institut d'Astrophysique de Paris (IAP), 10/2018

[14] "EFT of dissipative fluid: an application to cosmology", Marseille University, 10/2018

[13] "Late time evolution of isocurvature perturbations at second order", Padova University, 05/2018

[12] "Late time evolution of isocurvature perturbations at second order", Groningen University, 05/2018

[11] "Open system effective field theory for time-translational symmetry breaking: towards application to EFT of inflation", Utrecht University, 04/2018

[10] "A new method for higher order CMB anisotropy", Rikkyo University, 05/2017

[9] "A new method for higher order CMB anisotropy", Kobe University, 03/2017

[8] "CMB spectral distortions as solutions to the Boltzmann equations", KEK, 03/2017

[7] "Higher order anisotropies in the cosmic microwave background", Max Planck Institute of Astrophysics (Job Talk), 01/2017

[6] "Cosmological Constraints from $\mu$E cross-correlations" Syracuse University, 10/2016

[5] "Cosmological Constraints from $\mu$E cross-correlations" Manchester University, 10/2016

[4] "Cosmological Constraints from $\mu$E cross-correlations" Utrecht University, 09/2016

[3] "Cosmological Constraints from $\mu$E cross-correlations" Max Planck Institute of Astrophysics, 09/2016

[2] "The cosmic microwave background $\mu$-distortions and primordial gravitational waves", University of Nagoya, 09/2014

[1] "CMB $\mu$ distortion and primordial gravitational waves" Joint Seminar, Tokyo Institute of Technology, 05/2014

## PRIZE AND AWARDS

[4] Overseas Research Fellow of the Japan Society for the Promotion of Science, 01/04/2018 - 31/03/2020

[3] Research Fellow of the Japan Society for the Promotion of Science (PD), 01/04/2017 - 31/03/2018

[2] Research Fellow of the Japan Society for the Promotion of Science (DC2), 01/04/2016 - 31/03/2017

[1] Vice valedictorian, Department of Physics, Tokyo Institute of Technology, 03/2012

## FUNDINGS

[1] Grant-in-Aid for JSPS Fellows, Project/Area Number: 16J03220, Project Period (FY) 22/04/2016 - 31/02/2018, Fiscal Year 2017 : 1,430,000JPY (Direct Cost : 1,100,000JPY, Indirect Cost : 330,000JPY) Fiscal Year 2016 : 1,200,000JPY (Direct Cost : 1,200,000JPY)

## SUPERVISING AND MENTORING ACTIVITIES

[2] (Unofficial) supervision of a Master student, Tokyo Institute of Technology, 2017 - 2018

[1] Teaching assistant, Tokyo Institute of Technology, Mechanics, Electromagnetism, Analytical Mechanics, 10/2011 - 03/2017