

Koki Otaki

Curriculum Vitae (February 2024)

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Education

- 2015 – 2019 **B. Sc.**, *College of Physics, School of Science and Engineering, University of Tsukuba*
- 2019 – 2021 **M. Sc.**, *Master's Program in Physics, Graduate School of Pure and Applied Sciences, University of Tsukuba*
- 2021 – 2023 **M. Eng.**, *Degree Programs in Systems and Information Engineering, Graduate School of Science and Technology, University of Tsukuba (dual degree program)*
- 2021 – **Ph. D. student**, *Degree Programs in Pure and Applied Sciences, Graduate School of Science and Technology, University of Tsukuba*

Professional History

- 2021 – **JSPS Research Fellow (DC1)**, *Japan Society for the Promotion of Science*

Grant History

- 2021 – 2024 **Grant-in-Aid for JSPS Research Fellows**
2.2 M Japanese Yen (\approx 16 k USD)
- 2023 **International Astronomical Union Symposium No. 377 Grant**
237 EUR
- 2023 **The 123rd Hayakawa Satio Fund awarded by the Astronomical Society of Japan**
256, 230 Japanese Yen (\approx 1.7 k USD)

Refereed Papers

1. **Koki Otaki**, Masao Mori, "*Frequency of the dark matter subhalo collisions and bifurcation sequence arising formation of dwarf galaxies*", *Monthly Notices of the Royal Astronomical Society*, Volume 525, Issue 2, Pages 2535-2552 (2023)

Refereed Proceedings

1. **Koki Otaki**, Masao Mori, "*The formation of dark-matter-deficient galaxies through galaxy collisions*", *J. Phys. Conf. Ser.* 2207 012049 (2022)
2. **Koki Otaki**, Masao Mori, "*Study of Galaxy Collisions and Thermodynamic Evolution of Gas Using the Exact Integration Scheme*", *Lecture Notes in Computer Science*, vol 13378. Springer (2022)

Non-Refereed Proceedings

1. **Koki Otaki**, Masao Mori, "*Collision-induced formation of dark-matter-deficient galaxies*", Proceedings of the International Astronomical Union, 17(S373), 147-150 (2023)

Presentations at International Conferences

- 2021 **Koki Otaki**, Masao Mori, "*The formation of dark matter deficient galaxies through galaxy collisions*", XXXII IUPAP Conference on Computational Physics
- 2021 **Koki Otaki**, Masao Mori, "*Dark matter subhalo collisions and formation of dark-matter-deficient galaxies*", KASHIWA DARK MATTER SYMPOSIUM 2021
- 2021 Yuka Kaneda, Yudai Kazuno, **Koki Otaki**, Masao Mori, "*Evolution of the sub galactic dark matter halos in the cosmological context*", KASHIWA DARK MATTER SYMPOSIUM 2021
- 2022 **Koki Otaki**, Masao Mori, "*Study of collision frequency between dark matter subhalos*", 33rd IUPAP Conference on Computational Physics
- 2022 **Koki Otaki**, Masao Mori, "*Study of galaxy collisions and thermodynamic evolution of gas using the Exact Integration scheme*", The 22nd International Conference on Computational Science and Its Applications
- 2022 **Koki Otaki**, Masao Mori, "*Collision-induced formation of dark-matter-dominated galaxies and dark-matter-deficient galaxies*", XXXIst General Assembly International Astronomical Union
- 2022 Ayami Hotta, Masao Mori, **Koki Otaki**, "*Formation of the Andromeda Giant Southern Stream and the 10 kpc ring in the Andromeda galaxy*", XXXIst General Assembly International Astronomical Union
- 2022 **Koki Otaki**, Masao Mori, "*Collision processes between dark matter subhalos and collision-induced formation of galaxies*", The 9th East Asian Numerical Astrophysics Meeting
- 2022 Masao Mori, **Koki Otaki**, "*Galaxy Collisions and Formation of Dwarf Galaxies*", KASHIWA DARK MATTER SYMPOSIUM 2022
- 2022 Yuka Kaneda, Yudai Kazuno, **Koki Otaki**, Masao Mori, "*The effect of the cusp-to-core transformation on universal scaling relations of dark matter haloes*", KASHIWA DARK MATTER SYMPOSIUM 2022
- 2023 **Koki Otaki**, Masao Mori, "*Physical conditions for collision-induced formation of galaxies*", IAU Symposium 377: Early Disk-Galaxy Formation from JWST to the Milky Way
- 2023 Yuka Kaneda, **Koki Otaki**, Masao Mori, "*The Evolution and Scaling Relations of Dark Matter Haloes*", IAU Symposium 377: Early Disk-Galaxy Formation from JWST to the Milky Way
- 2023 Yuka Kaneda, Yudai Kazuno, **Koki Otaki**, Masao Mori, "*Dynamical evolution of the sub-galactic dark matter halos and the effect of the cusp-to-core transformation*", IAU Symposium 379: Dynamical Masses of Local Group Galaxies

2023 **Koki Otaki**, Masao Mori, "*Study of the collision-induced formation of dwarf galaxies*", ILR kickoff meeting

2023 **Koki Otaki**, Masao Mori, "*Study of bifurcation in the collision-induced galaxy formation via dark matter subhalo collisions*", 34th IUPAP Conference on Computational Physics

Colloquium Talks

2023 Kagoshima University, Kagoshima, Japan

2023 Ludwig Maximilian University of Munich, Munich, Germany

2023 Sapienza University of Rome, Rome, Italy

Professional Societies

2023 – Association of Japanese Theoretical Astronomy and Astrophysics (RIRONKON)

2019 – Astronomical Society of Japan

Committee Services

2022 Science Organizing Committee, the 52nd Summer School of Young Japanese Astronomers