

Curriculum Vitae

So Chigusa

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Personal Data

First Name: So
Last Name: Chigusa
Date of Birth: May 22, 1992
Place of Birth: Kobe, Japan
Nationality: Japanese
Age: 29
Sex: Male

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Education

| Date | Degree | Institution |
|---------------|--------------------------------|---------------------|
| Mar. 23, 2020 | Doctor of Philosophy (Physics) | University of Tokyo |
| Mar. 23, 2017 | Master of Science (Physics) | University of Tokyo |
| Mar. 25, 2015 | Bachelor of Science (Physics) | University of Tokyo |

Professional experience

Apr. 2020 – : Postdoc, High Energy Accelerator Research Organization (KEK)
Apr. 2015 – Mar. 2020 : Ph.D. Student, Department of Physics, University of Tokyo
(Dr. Takeo Moroi)

Teaching experience

Apr. 2015 – Sep. 2015 : Teaching Assistant for Undergraduate Class “Quantum Mechanics II”
at Department of Physics, University of Tokyo

Grants

Apr. 2020 – : JSPS, Research Fellowships for Young Scientists (PD)
Apr. 2017 – Mar. 2020 : JSPS, Research Fellowships for Young Scientists (DC1)
Amount: 2800000 JPY
Oct. 2015 – Mar. 2020 : MEXT, Program for Leading Graduate Schools

Honors and Awards

1. Best presentation award for young scientists @ Unraveling the History of the Universe 2020
2. Best Poster Award @ HPNP 2019

Publications

- [1] S. Chigusa, K. Hamaguchi, T. Moroi, A. Niki and K. Ono, *Studying squark mass spectrum through gluino decay at 100 TeV future hadron colliders*, 2102.07910.
- [2] S. Chigusa, T. Moroi and K. Nakayama, *Axion/Hidden-Photon Dark Matter Conversion into Condensed Matter Axion*, 2102.06179.

- [3] S. Chigusa, Y. Nakai and J. Zheng, *Implications of Gravitational Waves for Supersymmetric Grand Unification*, 2011.04090.
- [4] S. Chigusa, T. Moroi and Y. Shoji, *Precise Calculation of the Decay Rate of False Vacuum with Multi-Field Bounce*, *JHEP* **11** (2020) 006, [2007.14124].
- [5] S. Chigusa, M. Endo and K. Kohri, *Constraints on electron-scattering interpretation of XENON1T excess*, *JCAP* **10** (2020) 035, [2007.01663].
- [6] S. Chigusa, T. Moroi and K. Nakayama, *Detecting light boson dark matter through conversion into a magnon*, *Phys. Rev. D* **101** (2020) 096013, [2001.10666].
- [7] S. Chigusa, Y. Hosomi, T. Moroi and M. Saito, *Determining Wino Lifetime in Supersymmetric Model at Future 100 TeV pp Colliders*, *Phys. Lett. B* **803** (2020) 135260, [1912.00592].
- [8] S. Chigusa, T. Moroi and K. Nakayama, *Signals of Axion Like Dark Matter in Time Dependent Polarization of Light*, *Phys. Lett. B* **803** (2020) 135288, [1911.09850].
- [9] S. Chigusa, T. Moroi and Y. Shoji, *Bounce Configuration from Gradient Flow*, *Phys. Lett. B* **800** (2020) 135115, [1906.10829].
- [10] S. Chigusa, S. Kasuya and K. Nakayama, *Novel Flavon Stabilization with Trimaximal Neutrino Mixing*, *Phys. Rev. D* **100** (2019) 015030, [1905.11517].
- [11] T. Abe, S. Chigusa, Y. Ema and T. Moroi, *Indirect studies of electroweakly interacting particles at 100 TeV hadron colliders*, *Phys. Rev. D* **100** (2019) 055018, [1904.11162].
- [12] S. Asai, S. Chigusa, T. Kaji, T. Moroi, M. Saito, R. Sawada et al., *Studying gaugino masses in supersymmetric model at future 100 TeV pp collider*, *JHEP* **05** (2019) 179, [1901.10389].

- [13] S. Chigusa, Y. Ema and T. Moroi, *Probing electroweakly interacting massive particles with Drell–Yan process at 100 TeV hadron colliders*, *Phys. Lett. B* **789** (2019) 106–113, [1810.07349].
- [14] S. Chigusa, S. Kasuya and K. Nakayama, *Flavon Stabilization in Models with Discrete Flavor Symmetry*, *Phys. Lett. B* **788** (2019) 494–499, [1810.05791].
- [15] S. Chigusa and K. Nakayama, *Anomalous Discrete Flavor Symmetry and Domain Wall Problem*, *Phys. Lett. B* **788** (2019) 249–255, [1808.09601].
- [16] S. Chigusa, T. Moroi and Y. Shoji, *Decay Rate of Electroweak Vacuum in the Standard Model and Beyond*, *Phys. Rev. D* **97** (2018) 116012, [1803.03902].
- [17] S. Chigusa, T. Moroi and Y. Shoji, *State-of-the-Art Calculation of the Decay Rate of Electroweak Vacuum in the Standard Model*, *Phys. Rev. Lett.* **119** (2017) 211801, [1707.09301].
- [18] S. Chigusa and T. Moroi, *Bottom-Tau Unification in Supersymmetric $SU(5)$ Models with Extra Matters*, *PTEP* **2017** (2017) 063B05, [1702.00790].
- [19] S. Chigusa and T. Moroi, *Bottom-tau unification in a supersymmetric model with anomaly-mediation*, *Phys. Rev. D* **94** (2016) 035016, [1604.02156].

Invited Seminar Presentations

1. “固体中の「アクシオン」を用いた軽いボソン暗黒物質の直接探索”, 2021/3/1, Toyama, Kanazawa University
2. “Detecting Light Boson Dark Matter through Conversion into Magnon (On-line)”, 2020/6/22, Nagoya University
3. “Detecting Light Boson Dark Matter through Conversion into Magnon (On-line)”, 2020/6/12, UC Berkeley

4. “Detecting Light Boson Dark Matter through Conversion into Magnon (Online)”, 2020/6/2, Kyushu University
5. “Detecting Light Boson Dark Matter through Conversion into Magnon (Online)”, 2020/5/20, IBS
6. “Detecting Light Boson Dark Matter through Conversion into Magnon (Online)”, 2020/5/14, TDLI and INPAC
7. “Flowing to the Bounce”, 2019/10/24, Tohoku University
8. “Indirect Studies of Electroweakly Interacting Particles at 100 TeV Hadron Colliders”, 2019/7/23, Osaka University
9. “Indirect Studies of Electroweakly Interacting Particles at 100 TeV Hadron Colliders”, 2019/5/16, University of Florida
10. “Indirect Studies of Electroweakly Interacting Particles at 100 TeV Hadron Colliders”, 2019/5/10, Florida State University
11. “Indirect Studies of Electroweakly Interacting Particles at 100 TeV Hadron Colliders”, 2019/4/9, KEK
12. “Solutions to Domain Wall Problem in Models with Discrete Flavor Symmetry”, 2019/1/11, Hokkaido University
13. “Probing Electroweakly Interacting Massive Particles with Drell-Yan Process at 100 TeV Hadron Colliders”, 2018/10/16, Nagoya University

Presentations at International Conferences

(Oral)

1. “Axion/Hidden-Photon Dark Matter Conversion into Condensed Matter Axion (Invited)”, 2022/2/8, KEK IPNS-IMSS-QUP Joint workshop, Online
2. “Direct detection of light bosonic dark matter using spin excitation”, 2021/8/3, COSMO’21, Online

3. “Anomaly Mediation at Future Hadron Colliders”, 2020/8/4, KEK-PH 2020, Tsukuba
4. “Flowing to the Bounce”, 2020/1/14, Berkeley Week, IPMU
5. “Indirect Studies of Electroweakly Interacting Particles at 100 TeV Hadron Colliders”, 2019/8/20, SI2019, Gangneung, Korea
6. “Flowing to the Bounce”, 2019/8/9, NHWG26, Osaka
7. “Indirect Studies of Electroweakly Interacting Particles at 100 TeV Hadron Colliders”, 2019/5/22, SUSY 2019, Texas
8. “Indirect Studies of Electroweakly Interacting Particles at 100 TeV Hadron Colliders”, 2019/5/6, Pheno 2019, Pittsburgh
9. “Flavon Stabilization in Models with Discrete Flavor Symmetry”, 2018/12/6, KEK-PH 2018 winter, Tsukuba
10. “Decay Rate of the Electroweak Vacuum in the Standard Model and Beyond”, 2018/5/24, Planck 2018, Bonn
11. “Bottom-Tau Unification in Supersymmetric Models”, 2017/2/6, New Physics Forum, IPMU
12. “Bottom-Tau unification in Supersymmetric Model with Anomaly-Mediation”, 2016/7/05, SUSY 2016, Melbourne

(Poster)

1. “Probing Electroweakly Interacting Massive Particles with Precision Measurements at 100 TeV Hadron Colliders (poster)”, 2019/2/21, HPNP2019, Osaka

Presentations at Domestic Conferences

(Oral)

1. “物性系を用いた軽い暗黒物質の直接探索(招待講演)”, 2021/9/9, PPP2021, Online
2. “スピン励起を用いた軽いボソン暗黒物質の直接探索(招待講演)”, 2021/3/31, KEK「素核宇・物性」連携研究会, Online
3. “XENON1T 実験の結果を説明する模型への制限”, 2020/9/8, ダークマターの懇談会 2020 online, Online
4. “特徴的なシグナルを用いた暗黒物質模型の探索(招待講演)”, 2020/8/11, 新テラスケール研究会, Online
5. “マグノンを用いた軽いボソン暗黒物質の直接探索”, 2020/6/2, Unraveling the History of the Universe 2020, Online
6. “Flavon Stabilization without Domain Wall Problem in Discrete Flavor Symmetry Models (in Japanese)”, 2019/6/11, Neutrino Oscillation and Flavor Physics, Nagoya
7. “Zero Mode Problem in the Calculation of Decay Rate of the SM Electroweak vacuum”, 2018/9/15, JPS 2018, Shinshu
8. “Bottom-Tau unification in Supersymmetric Model with Anomaly-Mediation”, 2016/9/21, JPS 2016, Miyazaki

(Poster)

1. “Indirect Search of WIMP Dark Matter at Future 100 TeV Collider (Poster)”, 2018/8/9, PPP 2018, Kyoto
2. “Bottom Tau Unification in Supersymmetric Models (Poster)”, 2017/8/3, PPP 2017, Kyoto

Poster Presentations at International Summer Schools

1. “Decay Rate of the Electroweak Vacuum in the Standard Model and Beyond”, 2018/7/12, Cargese Summer School 2018, Kyoto
2. “Bottom Tau Unification in Supersymmetric Models (Poster)”, 2017/7/4, Les Houches Summer School 2017, Kyoto