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
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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

Sep. 2020 – :	Postdoc, Lawrence Berkeley National Laboratoy
Apr. 2020 – Aug. 2022:	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 – Aug. 2022:	JSPS, Research Fellowships for Young Scientists (PD) Amount: 3100000 JPY
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 and M. Yamazaki, *Quantum Simulations of Dark Sector Showers*, 2204.12500.

[2] S. Chigusa, T. Moroi and Y. Shoji, *Upper bound on the smuon mass from vacuum stability in the light of muon $g-2$ anomaly*, 2203.08062.

[3] S. Chigusa, S. Li, Y. Nakai, W. Zhang, Y. Zhang and J. Zheng, *Deeply Learned Preselection of Higgs Dijet Decays at Future Lepton Colliders*, 2202.02534.

[4] S. Chigusa, K. Hamaguchi, T. Moroi, A. Niki and K. Ono, *Studying squark mass spectrum through gluino decay at 100 TeV future hadron colliders*, *Phys. Lett. B* **817** (2021) 136332, [2102.07910].

[5] S. Chigusa, T. Moroi and K. Nakayama, *Axion/hidden-photon dark matter conversion into condensed matter axion*, *JHEP* **08** (2021) 074, [2102.06179].

[6] S. Chigusa, Y. Nakai and J. Zheng, *Implications of gravitational waves for supersymmetric grand unification*, *Phys. Rev. D* **104** (2021) 035031, [2011.04090].

[7] 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].

[8] S. Chigusa, M. Endo and K. Kohri, *Constraints on electron-scattering interpretation of XENON1T excess*, *JCAP* **10** (2020) 035, [2007.01663].

[9] 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].

[10] 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].

[11] 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].

[12] S. Chigusa, T. Moroi and Y. Shoji, *Bounce Configuration from Gradient Flow*, *Phys. Lett. B* **800** (2020) 135115, [1906.10829].

[13] S. Chigusa, S. Kasuya and K. Nakayama, *Novel Flavon Stabilization with Trimaximal Neutrino Mixing*, *Phys. Rev. D* **100** (2019) 015030, [1905.11517].

[14] 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].

[15] 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].

[16] 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].

[17] S. Chigusa, S. Kasuya and K. Nakayama, *Flavon Stabilization in Models with Discrete Flavor Symmetry*, *Phys. Lett. B* **788** (2019) 494–499, [1810.05791].

[18] S. Chigusa and K. Nakayama, *Anomalous Discrete Flavor Symmetry and Domain Wall Problem*, *Phys. Lett. B* **788** (2019) 249–255, [1808.09601].

[19] 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].

[20] 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].

[21] S. Chigusa and T. Moroi, *Bottom-Tau Unification in Supersymmetric SU(5) Models with Extra Matters*, *PTEP* **2017** (2017) 063B05, [1702.00790].

[22] 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. "Quantum Simulations of Dark Sector Showers", 2022/5/23, The University of Tokyo
2. "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
3. "Detecting Light Boson Dark Matter through Conversion into Magnon (Online)", 2020/6/22, Nagoya University
4. "Detecting Light Boson Dark Matter through Conversion into Magnon (Online)", 2020/6/12, UC Berkeley
5. "Detecting Light Boson Dark Matter through Conversion into Magnon (Online)", 2020/6/2, Kyushu University
6. "Detecting Light Boson Dark Matter through Conversion into Magnon (Online)", 2020/5/20, IBS
7. "Detecting Light Boson Dark Matter through Conversion into Magnon (Online)", 2020/5/14, TDLI and INPAC
8. "Flowing to the Bounce", 2019/10/24, Tohoku University
9. "Indirect Studies of Electroweakly Interacting Particles at 100 TeV Hadron Colliders", 2019/7/23, Osaka University
10. "Indirect Studies of Electroweakly Interacting Particles at 100 TeV Hadron Colliders", 2019/5/16, University of Florida
11. "Indirect Studies of Electroweakly Interacting Particles at 100 TeV Hadron Colliders", 2019/5/10, Florida State University

12. “Indirect Studies of Electroweakly Interacting Particles at 100 TeV Hadron Colliders”, 2019/4/9, KEK

13. “Solutions to Domain Wall Problem in Models with Discrete Flavor Symmetry”, 2019/1/11, Hokkaido University

14. “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. “Upper bound on the smuon mass from vacuum stability in the light of muon g − 2 anomaly”, 2022/6/7, PPC 2022, St. Louis

2. “Axion/Hidden-Photon Dark Matter Conversion into Condensed Matter Axion (Invited)”, 2022/2/8, KEK IPNS-IMSS-QUP Joint workshop, Online

3. “Direct detection of light bosonic dark matter using spin excitation”, 2021/8/3, COSMO’21, Online

4. “Anomaly Mediation at Future Hadron Colliders”, 2020/8/4, KEK-PH 2020, Tsukuba

5. “Flowing to the Bounce”, 2020/1/14, Berkeley Week, IPMU

6. “Indirect Studies of Electroweakly Interacting Particles at 100 TeV Hadron Colliders”, 2019/8/20, SI2019, Gangneung, Korea

7. “Flowing to the Bounce”, 2019/8/9, NHWG26, Osaka

8. “Indirect Studies of Electroweakly Interacting Particles at 100 TeV Hadron Colliders”, 2019/5/22, SUSY 2019, Texas

9. “Indirect Studies of Electroweakly Interacting Particles at 100 TeV Hadron Colliders”, 2019/5/6, Pheno 2019, Pittsburgh

10. “Flavon Stabilization in Models with Discrete Flavor Symmetry”, 2018/12/6, KEK-PH 2018 winter, Tsukuba
11. “Decay Rate of the Electroweak Vacuum in the Standard Model and Beyond”, 2018/5/24, Planck 2018, Bonn
12. “Bottom-Tau Unification in Supersymmetric Models”, 2017/2/6, New Physics Forum, IPMU
13. “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