

KaiJia Sun

Curriculum Vitae

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Personal information

First Name KaiJia,
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Gender Male
Data of birth November 1, 1988
Place of birth Jiangsu Province, P. R. China.
Address Cyclotron Institute, Department of Physics and Astronomy,
Texas A&M University,
College Station, Texas 77843, USA

Education

2018–present **Postdoc position,**
Cyclotron institute, Texas A&M University.
2011–2018 **Doctor's degree in Nuclear and Particle Physics,**
School of Physics and Astronomy, Shanghai Jiao Tong University.
2007–2011 **Bachelor's degree in Applied Physics,**
Department of Physics and Astronomy, Shanghai Jiao Tong University.

Award

2015 Honoured with excellent youth report in China National Nuclear Reaction Physics Conference, Guiyang
2014 Honoured with the first prize of academic presentations at INPAC Annual Symposium, Shanghai

Teaching

2021 University Physics (Physics 206) at Texas A&M University

Conference Talks & Summer School

Oct., 2021 Enhanced yield ratio of light nuclei in heavy ion collisions with a first-order QCD phase transition ,
Invited talk given at RHIC BES Tea online seminar .
Aug., 2021 Relativistic kinetic approach to light nuclei production in high-energy nuclear collisions ,
Brown Bag Luncheon talk given at Cyclotron institute .

- Oct., 2020 Probing QCD critical point with light nuclei production in relativistic heavy-ion collisions ,
Invited talk given at 12th RHIC BES theory and experiment online seminar .
- Aug., 2020 QCD criticality on light nuclei production in heavy-ion collisions,
Talk given at HEPIC seminar .
- Oct., 2017 Probing QCD critical fluctuations from light nuclei production in relativistic heavy-ion collisions, Wuhan, China,
Invited talk given at international EMMI workshop.
- Mar., 2017 Probing QCD critical fluctuations from light nuclei production in relativistic heavy-ion collisions,
Invited talk given at NA-61 theory meeting.
- July., 2016 The 8-th summer school for advanced theoretical physics: Nuclear theory and nucleon structure, Weihai, China.
- May., 2015 An improved analytical formula for cluster production in heavy-ion collisions,
Talk given at The International Workshop on Nuclear Dynamics in Heavy-Ion Reactions (IWND2016), Xinxiang, Henan, China.

Publication List

1. Title *Relativistic kinetic approach to light nuclei production in high-energy nuclear collisions*
Authors **K. J. Sun**, Rui Wang, Che Ming Ko, Yu-Gang Ma, and Chun Shen.
Journal under review [arXiv:2106.12742]
2. Title *Multiplicity scaling of light nuclei production in relativistic heavy-ion collisions*
Authors W. Zhao, **K. J. Sun**, C. M. Ko, and X. Luo
Journal Phys. Lett. B 820 136571 (2021) [arXiv:2105.14204]
3. Title *Effects of QCD critical point on light nuclei production*
Authors **K. J. Sun**, C. M. Ko, and F. Li
Journal Phys.Lett.B 816 (2021) 136258 [arXiv:2008.02325]
4. Title *Enhanced yield ratio of light nuclei in heavy ion collisions with a first-order QCD phase transition*
Authors **K. J. Sun**, C. M. Ko, F. Li, J. Xu, and L. W. Chen
Journal Eur. Phys. J. A 57, 313 (2021) [arXiv:2006.08929]
5. Title *Light nuclei production in relativistic heavy ion collisions from the AMPT model*
Authors **K. J. Sun** and C. M. Ko
Journal Phys.Rev.C 103 (2021) 6, 064909

6. Title *The QCD critical point from the Nambu-Jona-Lasino model with a scalar-vector interaction*
Authors **K. J. Sun**, C. M. Ko, S. Cao, and F. Li
Journal Phys. Rev. D **103**, 014006 (2021). [arXiv:2005.00182]
7. Title *Charmed hadron chemistry in relativistic heavy-ion collisions*
Authors S. Cao, **K. J. Sun**, S. Lin, S. Liu, W. Xing, G. Qin, and C. M. Ko
Journal Phys.Lett.B 807, 135561 (2020) [arXiv:1911.00456]
8. Title *Charmed hadron production in an improved quark coalescence model*
Authors **K. J. Sun**, S. Cho, C. M. Ko, S. H. Lee, and Y. Oh
Journal Phys. Rev. C **101**, 024909 (2020). [arXiv:1905.09774]
9. Title *Nuclear liquid-gas phase transition with machine learning*
Authors Rui Wang, Yu-Gang Ma, R. Wada, Lie-Wen Chen, Bin-He Wang, and **K. J. Sun**
Journal Phys. Rev. Res. 2, 043202 (2020) [arXiv:2010.15043]
10. Title *Probing QCD critical fluctuations from the yield ratio of strange hadrons in relativistic heavy-ion collisions*
Authors T. Shao, J. Chen, C. M. Ko, and **K. J. Sun**
Journal Phys.Lett.B 801, 135177 (2020) [arXiv:1909.09304]
11. Title *Suppression of light nuclei production in collisions of small systems at the Large Hadron Collider*
Authors **K. J. Sun**, C. M. Ko, J. Pu, and B. Donigus
Journal Phys. Lett. B**792** 132 (2019). [arXiv:1812.05175]
12. Title *Proof of Atiyah-Singer index theorem by canonical quantum mechanics*
Authors Z. Zhou, X. Duan and **K. J. Sun**
Journal J. Phys. A 51, 315201 (2018)
13. Title *Light nuclei production as a probe of the QCD phase diagram*
Authors **K. J. Sun**, L. W. Chen, C. M. Ko, J. Pu, and Z. Xu
Journal Phys. Lett. B**781** 499-504 (2018). [arXiv:1801.09382]
14. Title *Probing QCD critical fluctuations from light nuclei production in relativistic heavy-ion collisions*
Authors **K. J. Sun**, L. W. Chen, C. M. Ko and Z. Xu
Journal Phys. Lett. B**774** 103-107 (2017). [arXiv:1702.07620]
15. Title *An analytical coalescence formula for particle production in relativistic heavy-ion collisions*

- Authors **K. J. Sun** and L. W. Chen
Journal Phys. Rev. C **95**, 044905 (2017). [arXiv:1701.01935]
16. Title *Production of $\Lambda\Lambda$ and $\overline{\Lambda}n$ in central Pb-Pb collisions at $\sqrt{s_{NN}}=2.76$ TeV from covariant coalescence model*
Authors **K. J. Sun** and L. W. Chen
Journal Phys. Rev. C **94**, 064908 (2016). [arXiv:1607.04037]
17. Title *Antimatter ${}^4_{\Lambda}H$ Hypernucleus Production and the ${}^3_{\Lambda}H/{}^3He$ Puzzle in Relativistic Heavy-Ion Collisions*
Authors **K. J. Sun** and L. W. Chen
Journal Phys. Rev. C **93**, 064909 (2016). [arXiv:1512.00692]
18. Title *Production of antimatter ${}^{5,6}Li$ nuclei in central Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV*
Authors **K. J. Sun** and L. W. Chen
Journal Phys. Lett. B **751** 272-277 (2015). [arXiv:1509.05302]
19. Title *Effects of isovector coupling on quark matter properties in NJL model*
Authors H. Liu, J. Xu, L. W. Chen and **K. J. Sun**
Journal Phys. Rev. D **94**, 065032 (2016) [arXiv:1602.01579]