

Shuai Zha – *Curriculum Vitae*

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Positions

2019 Sep. - Postdoctoral researcher, Department of Astronomy, Stockholm University

Education

2015 Aug. -2019 Aug. Ph.D. in Physics - the Chinese University of Hong Kong
Thesis: Supernovae simulation and stellar evolution

2008 Sep. -2012 Jul. B.Sc. in Physics - Fudan University

Publications

First author:

1. Progenitor Dependence of Hadron-quark Phase Transition in Failing Core-collapse Supernovae
Shuai Zha, Evan P. O'Connor, André da Silva Schneider
Accepted by Astrophysical Journal, arXiv:2103.02268
2. Gravitational-wave Signature of a First-order Quantum Chromodynamics Phase Transition in Core-Collapse Supernovae
Shuai Zha, Evan P. O'Connor, Ming-chung Chu, Lap-Ming Lin, Sean M. Couch
Physical Review Letters **125**, 051102 (2020); *Editor's Suggestions*; arXiv:2007.04716
3. Evolution of ONeMg Core in Super-AGB Stars toward Electron-Capture Supernovae: Effects of Updated Electron-Capture Rate
Shuai Zha, Shing-Chi Leung, Toshio Suzuki, Ken'ichi Nomoto
Astrophysical Journal **886**, 22 (2019); arXiv:1907.04184; IPMU *press*.
4. Accretion-Induced Collapse of Dark Matter Admixed White Dwarfs - II: Rotation and Gravitational-wave Signals
Shuai Zha, Shing-Chi Leung, Ming-Chung Chu, Lap-Ming Lin
Astrophysical Journal **883**, 13 (2019); arXiv:1908.05150

Second-author:

5. Electron capture rates in ^{20}Ne for a forbidden transition to the ground state of ^{20}F relevant to final evolution of high density O-Ne-Mg cores
Toshio Suzuki, **Shuai Zha**, Shing-Chi Leung, Ken'ichi Nomoto
Astrophysical Journal **881**, 64 (2019); arXiv:1905.10400

6. Accretion-Induced Collapse of Dark Matter Admixed White Dwarfs - I : Formation of Low-mass Neutron Stars
Shing-Chi Leung, **Shuai Zha**, Ming-Chung Chu, Lap-Ming Lin, Ken'ichi Nomoto
Astrophysical Journal **884**, 9 (2019); arXiv:1908.05102
7. Surface pH and Ion Affinity at the Alcohol-Monolayer/Water Interface Studied by Sum-Frequency Spectroscopy
Yu-Chieh Wen, **Shuai Zha**, Chuanshan Tian, and Yuen-Ron Shen
The Journal of Physical Chemistry C, **120**, 28 (2016)
8. Unveiling Microscopic Structures of Charged Water Interfaces by Surface-Specific Vibrational Spectroscopy
Yu-Chieh Wen, **Shuai Zha**, Xing Liu, Shanshan Yang, Pan Guo, Guosheng Shi, Haiping Fang, Yuen-Ron Shen, and Chuanshan Tian
Physical Review Letters, **116**, 016101 (2016)

Co-author:

9. Constraints on the chemical enrichment history of the Perseus Cluster of galaxies from high-resolution X-ray spectroscopy
Aurora Simionescu et. al. (36 authors including Shuai Zha)
Mon. Notices Royal Astron. Soc., **483**, 1701 (2018)
10. Carbon nanodots featuring efficient FRET for two-photon photodynamic cancer therapy with a low fs laser power density
Jing Wang, Zehui Zhang, **Shuai Zha**, Yinyan Zhu, Peiyi Wu, Benjamin Ehrenberg, and Ji-Yao Chen
Biomaterials, **35**, 9372 (2014)

Seminar talks

- Nov. 2020 TDL Institute, Shanghai, China
- Oct. 2020 School of Physics, Central Normal University, Wuhan, China
- Sep. 2020 Yunnan Observatory, Kunming, Yunnan, China
- Sep. 2020 TDL Institute, Shanghai, China
- Aug. 2020 CTPU, IBS, South Korea, *via web*
- Feb. 2020 OKC, EO meeting, Stockholm, Sweden
- Jan. 2020 CUHK Seminar, Hong Kong, China
- Oct. 2018 ASIAA, Lunch talk, Taipei, Taiwan, China
- Jul. 2018 Kavli IPMU, APEC seminar, Tokyo, Japan
- Jul. 2016 Kavli IPMU, APEC seminar, Tokyo, Japan

Conference presentations

- Nov. 2020 Oral, Partikeldagarna 2020, Sweden
- Feb. 2020 Poster, Compact Objects for All, Lund, Sweden
- Nov. 2019 Oral, Oskar Klein Center day, Stockholm, Sweden
- May 2019 Oral, Electron-Capture-Initiated Stellar Collapse, Lorentz Center, Leiden, The Netherlands

Feb. 2019 Oral, Supernova Mini-Workshop in CUHK, Hong Kong, China

Nov. 2018 Oral, CoCoNuT Meeting 2018, CEA Saclay, Paris, France

Oct. 2018 Oral, The 8th East Asian Numerical Astrophysics Meeting, NCKU, Tainan, Taiwan, China

Sep. 2018 Poster, Sixth Annual GMT Community Science Meeting, Honolulu, Hawaii, United States

Feb. 2017 Poster, Quarks and Compact Stars, YITP, Kyoto University, Kyoto, Japan

Jul. 2016 Oral, 10th JGX Astrophysics Meeting, Xiamen University, Xiamen, China

Research experience

Aug 2020 - Sep 2020 Visiting scholar, TDLi Institute, Shanghai Jiaotong University, Shanghai, China

Sep 2017 - Jan 2018 Kavli IPMU, the University of Tokyo, Tokyo, Japan
 Collaborative research with Prof. Ken'ichi Nomoto on Evolution of Super-AGB stars towards Electron-Capture Supernova

Professional Activities

Feb. 2019 Organizer of Supernova Mini-Workshop in CUHK, Hong Kong, China

Grants and Selected Awards

Jun. 2020 IAU travel grant for IAU Symposium 362, ~ 400 Euro *Canceled due to covid-19*.

Dec. 2019 Grant for collaboration with University of Tokyo, 50000 SEK (~ 5000 US dollars)

Sep. 2017 Global Scholarship Programme for Research Excellence, CUHK, 20000 HKD

Sep. 2012 Scholarship for outstanding fresh graduate student, Fudan University

Sep. 2008 Scholarship for outstanding fresh undergraduate student, Fudan University

Computer times

Aug 2020 - Aug 2021 Co-Investigator, SNIC 2020/5-385, 90×1000 core-h/month

Teaching experiences

Jun. 2018 **Mentor** Lectures for summer students on supernovae and hydrodynamical simulations

Jun. 2017 **Mentor** Summer student Soumyadeep Das on supernova simulation

2015-2019 **Teaching assistant**, CUHK, General Physics, Astronomy, exercise class

2012 Spring **Teaching assistant**, Fudan University, University Physics, exercise class

Programming Languages

Fortran, Python, matlab, L^AT_EX, C

Human languages

Mandarin (native), English (fluent), Cantonese (medium), Japanese (basic)