

# Shuai Zha – *Curriculum Vitae*

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<b>Nationality</b>	Chinese	<b>Homepage</b>	joshuashzha.github.io

## 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*
- 2012 Aug. -2015 Jul.** M.Sc. in Physics - Fudan University  
*Thesis: Sum-frequency spectroscopy with femtosecond laser*
- 2008 Sep. -2012 Jul.** B.Sc. in Physics - Fudan University

## Publications

*First author:*

1. 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
2. Evolution of ONeMg Core in Super-AGB Stars towards 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*.
3. 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:*

4. Electron capture rates in  $^{20}\text{Ne}$  for a forbidden transition to the ground state of  $^{20}\text{F}$  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
5. 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

6. 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)
7. 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:*

8. 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)
9. 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

- 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

- 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
- 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

- Sep 2017 - Jan 2018     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,  $\sim 400$  Euro *Canceled due to covid-19*.
- Dec. 2019     Grant for collaboration with University of Tokyo, 50000 SEK ( $\sim 5000$  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,  $150 \times 1000$  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<sup>A</sup>T<sub>E</sub>X, C*

## Human languages

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