# Rui Luo

*Curriculum Vitae*

*CSIRO Astronomy and Space Science*
*Australia Telescope National Facility*
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## Education

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| 2013 - 2019 | **Ph.D., Astrophysics**, *Department of Astronomy, School of Physics*, Peking University, Beijing, China. |
| Thesis: | Measurement of the luminosity function of Fast Radio Bursts |
| Supervisor: | Prof. Kejia Lee (KIAA-PKU) |
| 2009 - 2013 | **B.Sc., Applied Physics**, *School of Physics*, Huazhong University of Science and Technology, Wuhan, China. |

## Employment

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| 2019 - present | **Research Plus Postdoctoral Fellow**, Australia Telescope National Facility, CSIRO Astronomy and Space Science, Marsfield, NSW, Australia. |

## Research Interests

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| Transients: | Fast Radio Bursts (FRBs), Pulsars, Radio Frequency Interferences (RFIs) |
| Statistics: | Bayesian Inference, Markov Chain Monte Carlo |
| ML: | Convolutioanl Neural Network, Active Learning, Unsupervised Learning |

## Awards and Prizes

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| 2019 | Vela Prize in FAST/Future Pulsar Symposium 8, China |
| 2013 - 2018 | Second Academic Scholarship, Peking University |
| 2016 | Kwang-Hua Scholarship, Peking University |
| 2015 | Second Prize of Chen Huxiong Scholarship, Peking University |
| 2013 | Annual Scholarship of National Astronomical Observatories, Chinese Academy of Sciences |

## Publications

(3 first-author, 3 second-author, H-index: 5, – Sep 2020)

## First-author papers:

3 **Luo, R.**, Wang, B. J., Men, Y. P., Zhang, C. F., Jiang, J. C., Xu, H., Wang, W. Y., Lee, K. J., Han, J. L., Zhang, B., et al., *Diverse polarisation angle swings from a repeating fast radio burst source*, 2020, Nature, in press

2 **Luo, R.**, Men, Y. P., Lee, K. J., Wang, W. Y., Lorimer, D. R., & Zhang, B., *On the FRB luminosity function - II. Event rate density*, 2020, MNRAS, 494, 665

1 **Luo, R.**, Lee, K. J., Lorimer, D. R., & Zhang, B., *On the normalised FRB luminosity function*, 2018, MNRAS, 481, 2320

## Co-author papers:

9 Zhang, S.-B., Hobbs, G., Russell, C. J., Toomey, L., Dai, S., Dempsey, J., Manchester, R. N., Johnston, S., Staveley-Smith, L., Wu, X.-F., Li, D., Yang, Y.-Y., Wang, S.-Q., Qiu, H., **Luo, R.**, Wang, C., Zhang, C., Zhang, L., & Mandow, R., *Parkes transient events: I. Database of single pulses, initial results and missing FRBs*, 2020, ApJS, 249, 14

8 Zhu, W., Li, D., **Luo, R.**, Miao, C., Zhang, B., Spitler, L., Lorimer, D.; Kramer, M., Champion, D., Yue, Y., Cameron, A., Cruces, M., Duan, R., Feng, Y., Han, J., Hobbs, G., Niu, C., et al., *A Fast Radio Burst discovered in FAST drift scan survey*, 2020, ApJ, 895, L6

7 Jiang, J. C., Wang, W. Y., **Luo, R.**, Du, S., Chen, X. L., Lee, K. J., & Xu, R. X., *FRB 171019: An event of binary neutron star merger?*, 2020, RAA, 20, 4, 56

6 Men, Y. P., Aggarwal, K, Li, Y., Palaniswamy, D., Burke-Spolaor, S., Lee, K. J., **Luo, R.**, Demorest, P., Tendulkar, S., Agarwal, D., Young, O., & Zhang, B., *Non-detection of fast radio bursts from six gamma-rayburst remnants with a possible magnetar engine*, 2019, MNRAS, 489, 3643

5 Men, Y. P., **Luo, R.**, Chen, M. Z., Hao, L. F., Lee K. J., Li, J., Li Z. X., Liu, Z. Y., Pei, X., Wen, Z. G., Wu, J. J., Xu, Y. H., Xu, R. X., Yuan, J. P., & Zhang, C. F., *Piggyback searching for fast radio bursts using Nanshan 26m and Kunming 40m radio telescopes – I. Observing and data analysis systems, discovery of a mysterious peryton*, 2019, MNRAS, 488, 3957

4 Wang, W. Y., Lu, J. G., Zhang, S. B., Chen, X. L., **Luo, R.**, & Xu, R. X., *Pulsar giant pulse: coherent instability near light cylinder*, 2019, SCPMA, 62(7), 979511

3 Yi, S.-X., Cheng, K. S., & **Luo, R.**, *Clumpy jets from black hole-massive star binaries as engines of Fast Radio Bursts*, 2019, MNRAS, 483, 4197

2 Wang, W. Y., **Luo R.**, Yue, H., Chen, X. L., Lee, K. J., & Xu, R. X., *FRB 121102: A Starquake-induced Repeater?*, 2018, ApJ, 852, 140

1 Yang, Y.-P., **Luo, R.**, Li, Z., & Zhang, B., *Large Host-galaxy Dispersion Measure of Fast Radio Bursts*, 2017, ApJ, 839, L25

# Conferences & Talks

Jul 2020　FRB2020 International Meeting, Zoom Webinar, Jul. 6-10, 2020
Contributed talk: *Measurement of the luminosity function of Fast Radio Bursts*

Mar 2020　ATNF Bolton Symposium, ARRC Building Lecture Theatre, Kensington, Perth, Australia, Mar. 10, 2020
Contributed talk: *A new repeating FRB discovered by the FAST telescope*

Dec 2019　CSIRO Co-learnium, Marsfield, NSW, Australia, Dec. 5, 2019
Contributed talk: *A beginner's guide to Bayesian inerence*

Sep 2019　CASS Colloquium, Marsfield, NSW, Australia, Sep. 4, 2019
Invited talk: *Measurement of the luminosity function of Fast Radio Bursts*

Jun 2019　FAST/Future Pulsar Symposium 8, Xi'an, China, Jun. 26-28, 2019
Contributed talk: *Measurement of the luminosity function of Fast Radio Bursts*

Mar 2019　Cosmology Group Meeting at NAOC, Beijing, China, Mar. 27, 2019
Invited talk: *Measurements on the FRB luminosity function*

Dec 2018　KIAA Graduate Dinner Talk, Beijing, China, Dec. 18, 2018
Invited talk: *An Overview on Fast Radio Bursts and FRB luminosity function*

Jul 2018　FAST/Future Pulsar Symposium 7, Guangzhou, China, Jul. 4-6, 2018

Apr 2018　NAOC Graduate Student Seminar, Beijing, China, Apr. 23, 2018
Invited talk: *A Review of Fast Radio Bursts and FRB luminosity function*

Sep 2017　Radio Astronomy Forum 2017, Pingtang, China, Sep. 24-27, 2017
Poster: *Simulating DM of host galaxies to derive FRB luminosity function*

Jun 2017　FAST/Future Pulsar Symposium 6, Wuhan, China, Jun. 28-30, 2017
Contributed talk: *Simulating DM of host galaxies to derive FRB luminosity function*

May 2017　Pulsar Timing Array in China, Beijing, China, May 30-31, 2017
Contributed as LOC member

Nov 2016　Chinese Astronomical Society 2016 Annual Meeting, Wuhan, China, Nov. 1-3, 2016
Contributed talk: *Simulating the dispersion measure of host galaxies*

Jul 2016　Jing-Guang-Xia Astrophysics Meeting, Xiamen, China, July 21-23, 2016
Contributed talk: *Simulating the dispersion measure of host galaxies*

Jul 2016　QTT Colloquium Series 2016, Zunyi, China, July 3-4, 2016
Contributed talk: *Simulating the dispersion measure of FRB host galaxies*

Jun 2016　PKU-XAO Bilateral Meeting, Urumqi, China, Jun. 10-13, 2015

Contributed talk: *Simulating the dispersion measure of FRB host galaxies*

Oct 2015   Chinese Astronomical Society 2015 Annual Meeting, Beijing, China, Oct. 19-21, 2015

Contributed talk: *Consideration of Research on FRBs*

Jul 2015   International Pulsar Timing Array 2015 Meeting, Parkes&Leura, Australia, July 19-31, 2015

Jul 2015   QTT Colloquium Series 2015, Ming'antu, China, July 2-3, 2015

Contributed talk: *Consideration of Research on FRBs*

May 2015   KIAA-SHAO Bilateral Workshop, Beijing, China, May 18-19, 2015

Contributed talk: *Consideration of FRB searching*

## Observing Experience

Apr–Sep 2020   Parkes 64-m radio telescope

Approved proposal: Monitoring the repeating FRB candidates in the Southern Sky

Nov 2019   Australia Telescope Compact Array

Observations: ATCA Duty Astronomer and observing CU Virginis at 16cm wavelength.

Jul 2019   Five-hundred-meter Aperture Spherical radio Telescope

Approved Proposal: Monitoring the repeating FRB candidates in the FAST "Shared-Risk" observations.

Aug 2017   Kunming 40-m radio telescope

Contributions: Helping install FRB backend and configure FRB searching software.

Apr 2016   Five-hundred-meter Aperture Spherical radio Telescope

Contributions: Helping configure ROACH2 and monitor frequency spectrum.

Aug 2015   Miyun 50-m radio telescope

Contributions: Helping install ROACH2 and observing pulsars.

Oct 2014   Kunming 40-m radio telescope

Contributions: Assisting calibration for polarization of backend and observing pulsars.

## Organising Experience

Nov 2019 – present   One of main organisers, CASS Co-learnia

Duties: Seeking the speakers, scheduling the slots, sending email reminders, hosting the talks and maintaining the resources on the Co-learnium Website

## Teaching Experience

2017 Teaching Assistant of GENERAL PHYSICS for non-physics schools, Peking University

2015 Teaching Assistant of ATOMIC PHYSICS, School of Physics, Peking University

## Technical Skills

Programming PYTHON (Proficient), C, C++, UNIX
Softwares MATLAB, MATHEMATICA, QT
Tools GIT, WIKI, HTML
Writing LaTeX, MARKDOWN

## Language

**English** *Professional working proficiency*
**Chinese** *Native language*
**Japanese** *Basic words and phrases only*