Rui Luo

Curriculum Vitae

CSIRO Astronomy and Space Science
Australia Telescope National Facility
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Education

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

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

Research Interests

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

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

First-author and major-contributed papers:

6 **Luo, R.**, Lee, K. J., Wang, W. Y., Lorimer, D. R., Men, Y. P., & Zhang, B., *On the FRB luminosity function*, 2019, MNRAS, submitted

5 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?*, 2019, RAA, submitted

4 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

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

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

Less-contributed papers:

3 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

2 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

1 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

Conferences & Talks

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

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

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

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

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

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

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

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

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

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

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

2016 PKU-XAO Bilateral Meeting, Urumqi, China, Jun. 10-13, 2015
Contributed talk: *Simulating the dispersion measure of FRB host galaxies*

2015 Chinese Astronomical Society 2015 Annual Meeting, Beijing, China, Oct. 19-21, 2015
Contributed talk: *Consideration of Research on FRBs*

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

2015 QTT Colloquium Series 2015, Ming'antu, China, July 2-3, 2015
Contributed talk: *Consideration of Research on FRBs*

2015 KIAA-SHAO Bilateral Workshop, Beijing, China, May 18-19, 2015
Contributed talk: *Consideration of FRB searching*

Observing Experience

Jul. 2019 At Five-hundred-meter Aperture Spherical radio Telescope
Approved Proposal: Observing FRBs in the FAST risk-sharing observations

Aug. 2017 At Kunming 40-m radio telescope
Contributions: Helping install FRB backend and configure FRB searching software

Apr. 2016 At Five-hundred-meter Aperture Spherical radio Telescope
Contributions: Helping configure ROACH2 and monitor frequency spectrum

Aug. 2015 At Miyun 50-m radio telescope
Contributions: Helping install ROACH2 and observe pulsars.

Oct. 2014 At Kunming 40-m radio telescope
Contributions: Assisting calibration for two polarization channels of backend and observe pulsars.

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 or bilingual proficiency*

Japanese *Basic words and phrases only*