

Jiaxin (Jay) Zhong

Post-Doc in Acoustics at Penn State University

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Last updated on April 17, 2023 ZnN3mD0AAAAJ Source code of this CV



Research Interests



Active Acoustic Metamaterial

Active Noise Control

Audio Signal Processing

Computational Acoustics

Parametric Array Loudspeaker

Employment



Post-Doc

Penn State University

Dec-2022 – Ongoing

University Park

Advisor: Dr. Yun Jing    

Education











Ph.D. in Acoustics

University of Technology Sydney

Mar-2019 – Aug-2022

Sydney, Australia

Advisors: Prof. Ray Kirby     , Dr. Mahmoud Karimi     , Prof. Xiaojun Qiu  

Parametric Array Loudspeakers and Applications in Active Noise Control

+ M.Sc. in Acoustics

Nanjing University

Sep-2015 – Jun-2018

Nanjing, China

Advisors: Dr. Jiancheng Tao     , Prof. Xiaojun Qiu  


Effects of a Finite Size Reflecting Disk on Sound Power Measurements

B.Sc. in Acoustics

Nanjing University

Sep-2011 – Jun-2015

Nanjing, China

Advisor: Prof. Xinlong Wang 

The Study of Matching Layers for Ultrasonic Transducers

Honors & Awards



ASA Early Career Travel Support Award
Acoustical Society of America (ASA)

17-Apr-2023

ICA-ASA Young Scientist Conference Attendance Grant
International Commission for Acoustics (ICA) with Acoustical Society of America (ASA)

24-Oct-2022

Young Professional Grant
International Institute of Noise Control Engineering (I-INCE)

23-Aug-2020

Australian Research Council (ARC) Linkage Scholarship
University of Technology Sydney

12-Jun-2020

Tech Lab Staff and Student Committee HDR Collaboration Grant
University of Technology Sydney

18-Oct-2019



Below you can find a list of my academic publications, along with links to DOI and PDF downloads.

Bold author: **self**. “*”: corresponding author. Underline author: students under the supervision of Dr. Jiaxin Zhong.








Books

- [B1] **Jiaxin Zhong** and Xiaojun Qiu, “Acoustic Waves Generated by Parametric Array Loudspeakers,” CRC Press, In preparation (2023).

Journal Articles

- [J20] **Jiaxin Zhong**, Haishan Zou, and Jing Lu*, “A modal expansion method for simulating reverberant sound fields generated by a directional source in a rectangular enclosure,” *J. Acoust. Soc. Am.* Under Review (2023).
- [J19] **Jiaxin Zhong**, Tao Zhuang, Ray Kirby, Mahmoud Karimi, Jing Lu, and Dong Zhang*, “Suppressing grating lobes for a steerable parametric array loudspeaker,” *IEEE Trans. Audio Speech Lang. Process.* Under review (2023).
- [J18] **Jiaxin Zhong**, Haishan Zou, Jing Lu, and Dong Zhang*, “A modified convolution model for calculating the far field directivity of a parametric array loudspeaker,” *J. Acoust. Soc. Am.* 153(3), 1439–1451 (2023).
- [J17] Tao Zhuang, **Jiaxin Zhong***, Ray Kirby, Mahmoud Karimi, and Jing Lu, “A steerable non-paraxial Gaussian beam expansion for a steerable parametric array loudspeaker,” *J. Acoust. Soc. Am.* 153(1), 124–136 (2023).
- [J16] **Jiaxin Zhong**, Tao Zhuang, Ray Kirby, Mahmoud Karimi, Xiaojun Qiu, Haishan Zou*, and Jing Lu, “Low frequency audio sound field generated by a focusing parametric array loudspeaker,” *IEEE Trans. Audio Speech Lang. Process.* 30, 3098–3109 (2022).
- [J15] **Jiaxin Zhong**, Ray Kirby, Mahmoud Karimi, and Haishan Zou*, “A spherical wave expansion for a steerable parametric array loudspeaker using Zernike polynomials,” *J. Acoust. Soc. Am.* 152(4), 2296–2308 (2022).
- [J14] **Jiaxin Zhong**, Ray Kirby, Mahmoud Karimi, Haishan Zou*, and Xiaojun Qiu, “Scattering by a rigid sphere of audio sound generated by a parametric array loudspeaker,” *J. Acoust. Soc. Am.* 151(3), 1615–1626 (2022).
- [J13] **Jiaxin Zhong**, Tao Zhuang, Ray Kirby, Mahmoud Karimi, Haishan Zou*, and Xiaojun Qiu, “Quiet zone generation in a free field with multiple parametric array loudspeakers,” *J. Acoust. Soc. Am.* 151(2), 1235–1245 (2022).
- [J12] **Jiaxin Zhong**, Ray Kirby, Mahmoud Karimi, and Haishan Zou*, “A cylindrical expansion of the audio sound for a steerable parametric array loudspeaker,” *J. Acoust. Soc. Am.* 150(5), 3797–3806 (2021).
- [J11] **Jiaxin Zhong***, Ray Kirby, and Xiaojun Qiu, “The near field, Westervelt far field, and inverse-law far field of the audio sound generated by parametric array loudspeakers,” *J. Acoust. Soc. Am.* 149(3), 1524–1535 (2021).
- [J10] **Jiaxin Zhong*** and Xiaojun Qiu, “On the spherical expansion for calculating the sound radiated by a baffled circular piston,” *J. Theor. Comput. Acoust.* 2050026 (2020).
- [J9] **Jiaxin Zhong***, Shuping Wang, Ray Kirby, and Xiaojun Qiu, “Reflection of audio sounds generated by a parametric array loudspeaker,” *J. Acoust. Soc. Am.* 148(4), 2327–2336 (2020).
- [J8] **Jiaxin Zhong***, Shuping Wang, Ray Kirby, and Xiaojun Qiu, “Insertion loss of a thin partition for audio sounds generated by a parametric array loudspeaker,” *J. Acoust. Soc. Am.* 148(1), 226–235 (2020).
- [J7] **Jiaxin Zhong***, Ray Kirby, and Xiaojun Qiu, “A spherical expansion for audio sounds generated by a circular parametric array loudspeaker,” *J. Acoust. Soc. Am.* 147(5), 3502–3510 (2020).
- [J6] **Jiaxin Zhong**, Baicun Chen, Jiancheng Tao*, and Xiaojun Qiu, “The performance of active noise control systems on ground with two parallel reflecting surfaces,” *J. Acoust. Soc. Am.* 147(5), 3397–3407 (2020).
- [J5] Shuping Wang*, **Jiaxin Zhong**, Xiaojun Qiu, and Ian Burnett, “A note on using panel diffusers to improve sound field diffusivity in reverberation rooms below 100 Hz,” *Appl. Acoust.* 169, 107471 (2020).
- [J4] **Jiaxin Zhong***, Ray Kirby, and Xiaojun Qiu, “A non-paraxial model for the audio sound behind a non-baffled parametric array loudspeaker (L),” *J. Acoust. Soc. Am.* 147(3), 1577–1580 (2020).
- [J3] **Jiaxin Zhong**, Jiancheng Tao*, and Xiaojun Qiu, “Increasing the performance of active noise control systems on ground with two vertical reflecting surfaces with an included angle,” *J. Acoust. Soc. Am.* 146(6), 4075–4085 (2019).
- [J2] **Jiaxin Zhong**, Jiancheng Tao*, and Xiaojun Qiu, “Increasing the performance of active noise control systems on ground with a finite size vertical reflecting surface,” *Appl. Acoust.* 154, 193–200 (2019).
- [J1] **Jiaxin Zhong**, Jiancheng Tao*, Feng Niu, and Xiaojun Qiu, “Effects of a finite size reflecting disk in sound power measurement,” *Appl. Acoust.* 140, 24–29 (2018).

Conference Papers

- [C7] **Jiaxin Zhong**, Ray Kirby, Mahmoud Karimi, Xiaojun Qiu, and Jing Lu, "Audio sound field generated by a parametric array loudspeaker in a rectangular room with lightly damped walls," *The 24th International Congress on Acoustics (ICA)*, Gyeongju, Korea, October 24–28, 2022. 
- [C6] **Jiaxin Zhong**, Tong Xiao, Benjamin Halkon, Ray Kirby, and Xiaojun Qiu, "An experimental study on the active noise control using a parametric array loudspeaker," *Inter-Noise 2020*, Seoul, Korea, August 23–26, 2020. 
- [C5] **Jiaxin Zhong**, Jiancheng Tao, and Xiaojun Qiu, "A numerical study on active noise radiation control systems between two parallel reflecting surfaces," *The 18th Asia-Pacific Vibration Conference*, Sydney, Australia, November 18–20, 2019. 
- [C4] Xiaojun Qiu, Qiaoxi Zhu, Shuping Wang, and **Jiaxin Zhong**, "A case study on the new reverberation room built in University of Technology Sydney," *The 23rd International Congress on Acoustics (ICA)*, Aachen, Germany, September 9–13, 2019. 
- [C3] Jiancheng Tao, **Jiaxin Zhong**, and Xiaojun Qiu, "Progress of research on active noise radiation control with reflecting surfaces," *Inter-Noise 2019*, Madrid, Spain, June 16–19, 2019. 
- [C2] **Jiaxin Zhong**, Jiancheng Tao, and Xiaojun Qiu, "Effects of the finite circular baffle size on the sound power measurements," *Inter-Noise 2017*, Hong Kong, China, August 27–30, 2017. 
- [C1] Jiancheng Tao, **Jiaxin Zhong**, and Xiaojun Qiu, "Noise radiation from an AC filter capacitor," *Inter-Noise 2017*, Hong Kong, China, August 27–30, 2017. 

Professional Activities & Services



Membership

- Member, **Institute of Electrical and Electronics Engineers (IEEE)**
- Young Professionals, **IEEE**
- Member, **Acoustical Society of America (ASA)**
- Associate Member, **Audio Engineering Society (AES)**

 01-Mar-2022 – Present
 01-Jan-2022 – 31-Dec-2023
 1-Jan-2021 – Present
 27-Jul-2021 – Present

Reviewer

- **Applied Acoustics**
- **Applied Sciences**
- **Journal of the Audio Engineering Society**
- **The 18th Asia-Pacific Vibration Conference (APVC)**
- **The Journal of the Acoustical Society of America**
- **Wave Motion**

 2020 – Present
 2021 – Present
 2023 – Present
 2019
 2022 – Present
 2021 – Present