

Long Li

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Employment

- 2024.02 - **Research Scientist**, Johann Radon Institute for Computational and Applied Mathematics, Austrian Academy of Science, (Mentor: Prof. Mourad Sini).
present
2021.07 - **Postdoctoral Fellow**, Institute of Applied Mathematics, Academy of Mathematics
2024.01 and Systems Science, Chinese Academy of Sciences, (Mentor: Prof. Bo Zhang).

Education

- 2016.07 - **PhD in Mathematics**, School of Mathematical Sciences, Peking University, (Su-
2021.06 pervisor: Prof. JianSheng Yang).
2012.09 - **Bachelor in Mathematics**, School of Mathematics and Statistics, Xidian University,
2016.07 China.

Research Interests

- Wave Propagation in Complex Media (particularly in layered structures and high-contrast materials)
- Inverse Problems for partial differential equations (particularly in inverse scattering problems)

Publications

Preprints

- 11 Long Li and Mourad Sini, High contrast transmission resonance for the Lamé system, arXiv:2601.10290.
- 10 Long Li and Mourad Sini, High contrast transmission and Fabry-Pérot-type resonances, arxiv:2510.19096v1.

Journal Articles

- 9 Long Li and Mourad Sini, Uniform resolvent estimates for subwavelength resonators: the Minnaert bubble case, arXiv:2406.02192v4, 2026, *accepted by SIAM Journal on Mathematical Analysis*.
- 8 Long Li and Mourad Sini, Uniform space and time behavior for acoustic resonators, arXiv:2410.09630v2, 2026, *accepted by Multiscale Modeling & Simulation. A SIAM Interdisciplinary Journal*.

- 7 Haiyang Liu, Long Li, Jiansheng Yang, Bo Zhang and Haiwen Zhang, A Nyström method for scattering by a two-layered medium with a rough boundary, *Journal of Computational and Applied Mathematics* 475 (2026), 116994.
- 6 Long Li, Jiansheng Yang, Bo Zhang and Haiwen Zhang, Uniform far-field asymptotics of the two-layered Green function in 2D and application to wave scattering in a two-layered medium, *SIAM Journal on Mathematical Analysis* 56 (2024), pp. 4143-4184
- 5 Long Li, Jiansheng Yang, Bo Zhang and Haiwen Zhang, Direct imaging methods for reconstructing locally rough interfaces from phaseless total-field data or phased far-field data, *SIAM Journal On Imaging Sciences* 17 (2024), pp. 188-224.
- 4 Long Li, Guanghui Hu and Jiansheng Yang, Piecewise-analytic interfaces with weakly singular points of arbitrary order always scatter, *Journal of Functional Analysis*, 284 (2023), 109800 (31pp).
- 3 Long Li, Jiansheng Yang, Bo Zhang and Haiwen Zhang, Imaging of buried obstacles in a two-layered medium with phaseless far-field data, *Inverse Problems* 37 (2021), 055004 (26pp).
- 2 Guanghui Hu, Long Li and Jun Zou, Unique determination of a penetrable scatterer of rectangular type for inverse Maxwell equations by a single incoming wave, *Inverse Problems* 35 (2019), 035006 (17pp).
- 1 Long Li, Guanghui Hu and Jiansheng Yang, Interface with weakly singular points always scatter, *Inverse Problems* 34 (2018), 075002 (13pp).

Project Experience

- 2022.11–2024.01 Uniqueness and efficient reconstruction algorithm for inverse scattering problems in a two-layered medium, Principal Investigator, Grant No. 2022M720158a, China Postdoctoral Science Foundation (first class).

Teaching Experience

- 2020.03–2020.07 **Teaching Assistant**, Advanced Mathematics B, Peking University.
- 2018.09–2019.01 **Teaching Assistant**, Advanced Mathematics B, Peking University.
- 2017.09–2018.01 **Teaching Assistant**, Design and Analysis of Algorithms, Peking University.
- 2017.03–2017.07 **Teaching Assistant**, Advanced Mathematics C, Peking University.

Invited Talks

- 2025.09 Long-Time dynamics of acoustic resonators and applications in inverse problems, The 2025 ÖMG–DMV Annual Meeting, Linz, Austria.
- 2025.07 Uniform space and time behavior for acoustic resonators, The 3rd HKSIAM Biennial Conference, HongKong, China.

- 2025.02 Uniform resolvent estimates for subwavelength resonators, The 3rd Conference on Mathematics of Wave Phenomena, Karlsruhe, Germany.
- 2023.10 Piecewise-analytic interfaces with weakly singular points of arbitrary order always scatter, The 21st Annual Conference of the China Society for Industrial and Applied Mathematics, Kunming, China.
- 2023.07 Direct imaging methods for reconstructing locally rough interfaces from phaseless total-field data, The 13th Chinese Conference on Computational Mathematics, NanJing, China.
- 2021.10 Imaging of buried obstacles in a two-layered medium with phaseless far-field data, The 19th Annual Conference of the China Society for Industrial and Applied Mathematics, Hefei, China.

--- Awards and Fellowships

- 2020.09 **Peking University Presidential Scholarship**, Peking University.
- 2019.09 **Peking University Presidential Scholarship**, Peking University.
- 2018.09 **May 4th Scholarship**, Peking University.
- 2018.09 **Peking University Presidential Scholarship**, Peking University.
- 2017.09 **Peking University Presidential Scholarship**, Peking University.
- 2016.09 **Peking University Presidential Scholarship**, Peking University.
- 2014.09 **National Scholarship**, China Ministry of Education.