Research Outputs of Hongyu Liu (04/2024)

• Books/Monographs/Book Chapters

[1] H. Diao and H. Liu, *Spectral Geometry and Inverse Scattering Theory*, Springer, Cham, 2023. ISBN: 978-3-031-34614-9

[2] J. Li and H. Liu, *Numerical Methods for Inverse Scattering Problems*, Springer, Singapore, 2023. ISBN: 978-981-99-3771-4

[3] Y. Deng and H. Liu, *Spectral Theory of Localized Resonances and Applications*, Springer, Singapore, 2024. ISBN: 978-981-99-6246-4

[4] L. Borcea, H. Kang, H. Liu and G. Uhlmann, *Inverse Problems and Imaging*, Panoramas et Synthéses, Numéro 44, Société Mathématique de France, 2015. ISBN: 978-2-85629-793-3

[5] J. Li, H. Liu and J. Zou, *An efficient multilevel algorithm for inverse scattering problem*, Advances in Computation and Intelligence, Lecture Notes in Computer Science, Springer-Berlin, 2007.

• Patents

H. Liu and D. Ho, *Method and system for generating a 3D image of a body shape*, accepted for US patent, Priority No. 17/736,382.

J. Li and H. Liu, *A real-time medical monitoring and alerting method based on mobile devices* (in Chinese), accepted for China Patent, Application Number: CN201510727435.0, Publicity Number: CN105306717A.

H. Liu, P. Meng and W. Yin, *Contactless 3D body reconstruction technology based on inverse acoustic scattering method* (in Chinese), filed for China patent, CityU Reference Number: PWG/PA/1569/8/2023

• Journal Publications

Submitted

[1] Y. Li, H. Liu and C. W. K. Lo, On inverse problems in multi-population aggregation models, `arXiv:2404.09837`

[2] H. Diao, H. Liu, Q. Meng and H. Liu, Effective medium theory for embedded obstacles in electromagnetic scattering with applications, preprint, 2024.

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[6] Y. Deng, H. Liu and L. Zhu, Optimal estimate of electromagnetic field concentration between nearly-touching inclusions in the quasi-static regime, arXiv:2403.12697

[7] H. Liu and C. W. K. Lo, Determining state space anomalies in mean field games, preprint, 2023.

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[13] C. L. Lin, H. Liu and C. W. K. Lo, Strong uniqueness principle for fractional polyharmonic operators and applications to inverse problems, arXiv:2307.00744

[14] P. Meng, Z. Xu, X. Wang, W. Yin and H. Liu, A novel method for solving the inverse spectral problem with incomplete data, preprint, 2023.

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[1] Y. Deng, H. Liu and Y. Wang, Identifying active anomalies in a multi-layered medium by passive measurement in EIT, *SIAM J. Appl. Math.*, 2023.

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