

Pengcheng Li (李鹏程)

Personal

Basic: 1992/07/27; born at Gao'an city, Jiangxi Province, P.R. China.

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Positions

- 03/2023–present Assistant Professor, Department of Mathematics, School of Sciences, **Great Bay University**.
- 03/2021–02/2023 Postdoctor, Department of Mathematics, **Southern University of Science and Technology**; supervisor: Yifei, Zhu (朱一飞).
- 09/2020–01/2021 Visiting Research Fellow, Center for Topology and Geometry based Technologies, **Hebei Normal University**; supervisor: Jie Wu (吴杰).

Education

- 09/2015–06/2020 M.S.-Ph.D. in Pure Mathematics, Academy of Mathematics and Systems Science (AMSS), **University of Chinese Academy of Sciences** (UCAS); supervisor: Jianzhong Pan (潘建中).
- 09/2011–07/2015 B.S. in Mathematics and Applied Mathematics, School of Mathematical Science, **Dalian University of Technology**.

Research Interests

My research field lies in **algebraic topology**; I am particularly interested in the homotopy theory of $(n-1)$ -connected $(n+2)$ -dimensional finite CW-complexes (A_n^2 -complexes), modular cohomotopy theory, homotopy types of manifolds.

Publications

My ResearchGate is [Pengcheng-Li-3](#), MR author ID is [1326070](#), ORCID is [0000-0003-3845-3796](#), and Web of Science ResearcherID is [GPF-5329-2022](#).

Published or accepted articles

6. **Pengcheng Li**, Zhongjian Zhu*, *The Homotopy Decomposition of the Suspension of a non-simply-connected 5-manifold*, to appear in **Proceedings of the Royal Society of Edinburgh Section A: Mathematics**. [arXiv: 2311.16642](#).
5. **Pengcheng Li***. *Homotopy types of suspended 4-manifolds*, to appear in **Algebraic and Geometric Topology**. [arXiv: 2211.12741](#).
4. **Pengcheng Li**, Jianzhong Pan, and Jie Wu*. *On Modular Cohomotopy Groups*, **Israel Journal of Mathematics**, vol. 253, 2023: 887-915.
[DOI: 10.1007/s11856-022-2409-0](#).
3. **Pengcheng Li***. *Self-closeness numbers of product spaces*, **Homology, Homotopy and Applications**, vol. 25 (1), 2023: 249-264.
[DOI:10.4310/HHA.2023.v25.n1.a13](#).
2. **Pengcheng Li***. *(Co)Homology self-closeness numbers of simply-connected spaces*, **Homology, Homotopy and Applications**, vol. 23(1), 2020: 1-16.
[DOI: 10.4310/HHA.2021.v23.n1.a1](#).
1. Zhongjian Zhu, Pengcheng Li and Jianzhong Pan. *Periodic problem on homotopy groups of Chang complexes $C_r^{n+2,r}$* , **Homology, Homotopy and Applications**, vol. 21(2), 2019: 363-375.
[DOI: 10.4310/HHA.2019.v21.n2.a20](#).

Preprints

3. **Pengcheng Li** and Zhongjian Zhu, *Suspension Homotopy of $(n - 1)$ -connected $(2n + 2)$ -dimensional Poincaré Duality Complexes*, [arXiv: 2306.12869](#).
2. Ruizhi Huang, Pengcheng Li*, *Suspension homotopy of simply-connected 7-manifolds*, [arXiv: 2208.13145](#).
1. **Pengcheng Li***, *Homotopy classification of maps between A_n^2 -complexes and applications in self-homotopy equivalences*, [arXiv: 2008.03049](#).

Grants and Awards

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| 01/2022–12/2023 | The Young Scientists Program of National Natural Science Foundation of China, Grant no. 12101290: “The homotopy theory of $(n - 1)$ -connected $(n + 2)$ -dimensional CW-complexes and its applications in geometry and physics”. |
| 06/2021–03/2023 | The fellowship of China Postdoctoral Science Foundation (Grant no. 2021M691441). |
| 2020 | Zhu-Li yuehua Outstanding Doctoral Scholarship (non-western), UCAS. |
| 2017 | Amy scholarship Excellence Award, AMSS, UCAS. |
| 2015 | Outstanding Ph. D. Student Entrance Scholarship of AMSS, UCAS. |

Presentations on conferences or workshops

Workshop: Advances in Homotopy theory, I & II

Speaker for the Workshop I, *Modular cohomotopy and cohomology*.

Organizers: The Southampton Centre for Geometry, Topology and Applications (CGTA) and the Beijing Institute of Mathematical Sciences and Applications (BIMSA); online.

Time: I on September 15–17, 2021; II on May 2–4, 2022.

Teaching

Teaching Assistant:

- Linear Algebra (MA113), Autumn 2022, instructor: Xuli Han (韩旭里), Southern University of Science and Technology.

Instructor, Great Bay University:

- Introduction to Topology.