

# 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

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9. **Pengcheng Li**, Zhongjian Zhu\*, *The Homotopy Types of Suspended Simply-connected 6-manifolds*, to appear in **Homology, Homotopy and Applications**.
8. Ruizhi Huang, **Pengcheng Li**\*, *Suspension splitting and cohomotopy sets of simply connected 7-manifolds*, to appear in **Canadian Journal of Mathematics**.  
[arXiv: 2208.13145](#).
7. **Pengcheng Li**, Jianzhong Pan, and Jie Wu\*. *Cohomotopy Sets of  $(n - 1)$ -connected  $(2n + 2)$ -manifolds for small  $n$* , to appear in **Transactions of London Mathematical Society**, vol. 253, 2023: 887-915.  
[arXiv: 2410.16055](#).
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**.  
[DOI:10.1017/prm.2024.49](#).
5. **Pengcheng Li**\*, *Homotopy types of suspended 4-manifolds*, **Algebraic and Geometric Topology**, vol. 24 (2024), Issue 5: 2933-2956.  
[DOI: 10.2140/agt.2024.24.2933](#).
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

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1. **Pengcheng Li**\*, *Homotopy classification of maps between  $A_n^2$ -complexes and applications in self-homotopy equivalences*, [arXiv: 2008.03049](#).
- 2.

## 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

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The following listed presentations or talks are given in the order of the form:

*Title of the talk*, Conference or Workshop name, Time; Main Hosts.

1. *Stable cohomotopy groups of manifolds in codimension 2*, [Unstable Homotopy Forum 2025](#), Aug. 12-16, 2025; AMSS, CAS.
2. *Modular cohomotopy and cohomology*. Advances in Homotopy theory Workshop I, September 15–17, 2021; The Southampton Centre for Geometry, Topology and Applications (CGTA) and the Beijing Institute of Mathematical Sciences and Applications (BIMSA) (online)
3. *Cohomotopy sets of manifolds of small dimension*. [Advances in Homotopy theory Workshop VII](#), February, 2025; Southampton University and BIMSA (online),
4. *Cohomotopy sets of manifolds of small dimension*, [The 9th East Asian Conference on Algebraic Topology](#), May 12–May 16, 2025; Hebei Normal University.

## Teaching

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Teaching Assistant in Sustech:

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

Instructor, Great Bay University:

- Introduction to Topology (summer school course), 2023; .

**Note:** This CV was updated on August 18, 2025.