Baoyi Chen — Curriculum Vitae

CONTACT INFORMATION

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Dallas, TX 75248

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EDUCATION

Ph.D. Physics — Aug 2021

California Institute of Technology, Pasadena, CA, USA

Dissertation Advisor: Prof. Yanbei Chen

Dissertation Title: *"Near horizon black hole physics"*

B.S. Materials Physics — June 2015

Nanjing University, Nanjing, Jiangsu, China

Thesis Title: *"Into the Magnetic Skyrmion"*

EMPLOYMENT

Associate — Oct 2021 - present

Goldman Sachs

2001 Ross Ave, Dallas, TX, USA

Duties: Liquidity risk strategist

Graduate Research and Teaching Assistant — Fall 2015 - present

California Institute of Technology

1200 E. California Blvd, Pasadena, CA, USA

Duties: Graduate research in theoretical physics and teaching assitantship

Undergraduate Visiting Internship Student — Summer 2014

The Hong Kong University of Science and Technology, Hong Kong, China

Duties: Summer research in theoretical physics

RESEARCH INTERESTS

General relativity, black hole physics, and quantum field theory in curved spacetime. Current focus includes near-horizon black hole physics, and physical implications from gravitational-wave experiments.

PUBLICATIONS (ONLINE)

ORCID: 0000-0002-3927-6843

arXiv: https://arxiv.org/a/chen_b_3.html

INSPIRE-HEP: http://inspirehep.net/author/profile/Bao.Yi.Chen.2

Google Scholar: https://scholar.google.com/citations?user=hqZzQ4UAAAAJ

HONORS AND AWARDS

Caltech C Fellowship — 2020

Caltech

Samsung Scholarship — 2013

Samsung Electronics Co., Ltd.

1st prize of CUMCM, Provincial Level 2013
Contemporary Undergraduate Mathematical Contest in Modeling 2013

Outstanding Student Award 2012
Nanjing University

2nd prize of CUMCM, National Level 2012
Contemporary Undergraduate Mathematical Contest in Modeling 2012

Teaching and Mentoring

Teaching Assistant, California Institute of Technology

- ❑ Ph 236, General Relativity — Fall 2019
- ❑ Ph 139, Introduction to Particle Physics — Spring 2019
- ❑ Ph 125, Quantum Mechanics — Winter 2018
- ❑ Ph 205, Relativistic Quantum Mechanics — Winter 2017
- ❑ Ph 106, Topics in Classical Physics — Fall 2017

SURF Co-Mentor, California Institute of Technology
Daining Xiao (undergraduate), University of Cambridge — Summer 2019

SURF Co-Mentor, LIGO
Shuo Xin (undergraduate), Tongji University — Summer 2019

Professional Activities

Journal Referee
Physics Letters B

Language and Skills

Natural Language: Native in Mandarin. Fluent in English.

Programming Language: Proficient in Mathematica, Python, Bash. Experience in C, Swift.

Markup Language: Proficient in LaTeX, Markdown. Experience in HTML, CSS.

Github: https://github.com/hughug

Invited Talks

1. *Instability of exotic compact objects and its implications for GW echoes* [slides]
   Perimeter Institute, Waterloo, ON, Canada — April 2019

Contributed Talks

1. *Instability of exotic compact objects and its implications for GW echoes* [slides]
   GR 22 & Amaldi 13, Valencia, Spain — July 2019
2. *Gedanken experiments to destroy a BTZ black hole* [☞]
   APS April Meeting 2019, Denver, CO, USA — April 2019
3. *Deformations of extremal black holes in GR and from stringy interactions* [☞]
   34th Pacific Coast Gravity Meeting, Caltech — March 2018
   APS April Meeting 2018, Columbus, OH — April 2018
4. *Linear metric perturbations in near-horizon extremal Kerr* [☞]

33rd Pacific Coast Gravity Meeting, UCSB March 2017

PUBLICATIONS IN PREPARATION

1. Shuo Xin, **B. Chen**, et. al. *Gravitational-wave echoes from spinning exotic compact remnant objects: numerical waveformsfrom the Teukolsky equation*

NON-REFEREED PUBLICATIONS

1. **B. Chen**, Yanbei Chen, Yiqiu Ma, Ka-Lok R. Lo, Ling Sun (2019), *Instability of exotic compact objects and its implications for gravitational-wave echoes*, prepared for submission to Phys. Rev. Lett , gr-qc/1902.08180

REFEREED PUBLICATIONS

1. **B. Chen**, Qingwen Wang, Yanbei Chen (2020), *Tidal response and near-horizon boundary conditions for spinning exotic compact objects*, Phys. Rev. D **103**, 104054,[gr-qc/2012.10842]
2. **B. Chen**, Feng-li Lin, Bo Ning, Yanbei Chen (2020), *Constraints on low-energy effective theories from weak cosmic censorship*, Phys. Rev. Lett. **126**, 031102, [gr-qc/2006.08663]
3. **B. Chen**, Feng-Li Lin, Bo Ning (2019), *Gedanken experiments to destroy a BTZ black hole*, Phys. Rev. D **100**, 044043, [gr-qc/1902.00949]
4. **B. Chen**, L. C. Stein (2018), *Deformation of extremal black holes from stringy interactions*, Phys. Rev. D **97**, 084012, [gr-qc/1802.02159]
5. **B. Chen**, L. C. Stein (2017), *Separating metric perturbations in near-horizon extremal Kerr spacetimes*, Phys. Rev. D **96**, 064017, [gr-qc/1707.05319]
6. **B. Chen**, G. Chen, Y. E. Cheung, R. Xie, Y. Xin (2015), *Top-forms of leading singularities in nonplanar multi-loop amplitudes*, Eur. Phys. J. C **78** 164, [hep-th/1507.03214]
7. **B. Chen**, G. Chen, Y. E. Cheung, Y. Li, R. Xie, Y. Xin (2014), *Nonplanar On-shell Diagrams and Leading Singularities of Scattering Amplitudes*, Eur. Phys. J. C **77** 80, [hep-th/1411.3889]

REFERENCES

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Leo C. Stein
Assistant Professor of Physics lcstein@olemiss.edu
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