Yunjia Bao

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Personal Information

Mailing Address: 3203 SE Woodstock Blvd., Reed College MS 47, Portland OR 97202, U.S.A.

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Email: baoy@reed.edu

Citizenship: China

Education Background

2016 – Present **Reed College, Portland, OR**, *U.S.A.*, Bachelor of Arts in Physics.
Degree expected on May 2020
Thesis title: Simplifying Calculations with Spinor Helicity Formalism

Publications

[1] Yunjia Bao and Andrew J. Larkoski. Calculating Pull for Non-singlet Jets. *J. High Energy Phys.*, 2019(12):035, December 2019. arXiv:1910.02085, doi:10.1007/jhep12(2019)035.

[2] Yunjia Bao, Ella Banyas, and Lucas Illing. Periodic and quasiperiodic dynamics of optoelectronic oscillators with narrow-band time-delayed feedback. *Phys. Rev. E*, 98(6), December 2018. doi:10.1103/PhysRevE.98.062207.

Professional Experience

Research Experience

Jun 2019 – Sep 2019 **Summer Research Fellow**, *Department of Physics, Reed College*, Portland, OR.
Principal investigator: Prof. Andrew Larkoski
- Research area: High-energy particle phenomenology
- Research title: Calculating Jet Pull for Non-singlet QCD Jets
- Funding source: 2019 Physics Summer Award (Department of Physics, Reed College)

May 2018 – Aug 2018 **Summer Research Fellow**, *Department of Physics, Reed College*, Portland, OR.
Principal investigator: Prof. Lucas Illing
- Research area: Nonlinear dynamics
- Research title:
  1. Periodic and Quasiperiodic Dynamics of Optoelectronic Oscillators with Narrowband Time-Delayed Feedback
  2. Amplitude Death in Time-Delayed Nonlinear Oscillator Networks
- Funding source: 2018 Delord-Mockett Award (Department of Physics, Reed College)

May 2017 – Aug 2017 **Summer Research Fellow**, *Department of Physics, Reed College*, Portland, OR.
Principal investigator: Prof. Lucas Illing
- Research area: Nonlinear dynamics
- Research title: Dynamics of Dual Delay Oscillators with Narrowband Feedback
- Funding source: 2017 Reed College Science Research Fellowship (Reed College)

Academic Support Experience

Sep 2019 – Present **Individual Peer Tutor**, *Office of Academic Support, Reed College*, Portland, OR.
Supervisor: Mr. Miguel Rodriguez
- Tutoring and providing academic supports for the following courses:
  - PHYS 311 (Classical Mechanics I)
  - PHYS 331 (Advanced Laboratory I)
  - PHYS 351 (Thermal Physics)
  - PHYS 202 (Modern Physics)
  - MATH 311 (Complex Analysis)
  - PHYS 322 (Electrodynamics II)
  - PHYS 323 (Optics)
  - PHYS 332 (Advanced Laboratory II)

Sep 2018 – May 2019 **PHYS 320 Grader**, *Department of Physics, Reed College*, Portland, OR.
Supervisors: Prof. Darrell Schroeter and Prof. Mark Beck
- Graded students' assignments for advanced undergraduate physics courses on electrodynamics

Sep 2017 – May 2018 **PHYS 200 Grader**, *Department of Physics, Reed College*, Portland, OR.
Supervisors: Prof. Joel Franklin and Prof. Jenna Smith
- Graded students' assignments for intermediate undergraduate physics courses

Honors and Awards

Research grant
- 2019 Physics Summer Award (Department of Physics, Reed College)
- 2018 Delord-Mockett Award (Department of Physics, Reed College)
- 2017 Reed College Science Research Fellowship (Reed College)

Academic achievement
- 2018-2019 President's Commendation for Excellence in Scholarship (Reed College)
- 2017-2018 President's Commendation for Excellence in Scholarship (Reed College)
- 2016-2017 President's Commendation for Excellence in Scholarship (Reed College)

Skills

Software and Programming

Wolfram Language	advanced	Java	intermediate
LabVIEW	advanced	MATLAB	beginner
Python	intermediate	C++	beginner

Languages
- Chinese: native language proficiency
- English: bilingual proficiency (near native) — 10+-year experience
- German: basic reading and communication — 1-year experience
- French: basic reading and communication — 1-year experience

Contributed Presentations

Oct 2019 Reed College Pre-Inauguration Student Showcase: *Waving a Red Rag to a Pull: Investigating an Observable in Particle Collision Experiments*

Sep 2019 Reed College Physics Seminar: *Waving a Red Rag to a Pull: Investigating Jet Pulls Soft and Collinear Behavior in Three-jet Final States*

Sep 2019 Reed College Summer Research Poster Session: *Waving a Red Rag to a Pull: Investigating an Observable in Particle Collision Experiments*

Sep 2018 Reed College Physics Seminar: *Periodic and quasiperiodic dynamics of optoelectronic oscillators with narrow-band time-delayed feedback*

Aug 2018 Reed College Summer Research Poster Session: *Amplitude death in directly coupled nonlinear oscillators*

Aug 2018 Reed College Summer Research Poster Session: *Periodic and quasiperiodic dynamics of optoelectronic oscillators*

Jun 2018 American Physical Society Northwest Section Annual Meeting: *Periodic and quasiperiodic dynamics of optoelectronic oscillators with narrow-band time-delayed feedback*

Sep 2017 Reed College Physics Seminar: *Dynamics of delayed-feedback optoelectronic oscillators*

Sep 2017 Reed College Summer Research Poster Session: *Dynamics of delayed-feedback optoelectronic oscillators*

Professional Memberships

American Physical Society