

Leon Hostetler

leonhostetler@gmail.com

LeonHostetler.com

[ORCID: 0000-0002-7416-1443](https://orcid.org/0000-0002-7416-1443)

[Google Scholar](#)

[iNSPIRE HEP](#)

Education

Ph.D., Physics and Computational Mathematics, Science and Engineering

Michigan State University, 2023 (expected)

Dissertation: "Toward Quantum Simulation of QCD" (tentative)

Advisor: Alexei Bazavov

M.S., Physics

Michigan State University, May 2020

B.S., Physics and Applied & Computational Mathematics

Florida State University, Summa Cum Laude, May 2018

Honors Thesis: "Numerical Mass Estimates from Correlation Functions in a 4D SU(2) Higgs Model"

Advisor: Bernd Berg

A.A., Associate in Arts

State College of Florida, Manatee-Sarasota, Summa Cum Laude, May 2015

Selected Honors and Awards

University Distinguished Fellowship, Michigan State University, June 2018–present

College of Natural Science Recruiting Fellowship, Michigan State University, Jan. 2018 (superseded)

Charles and Anna Uhrhan Scholarship, Florida State University, May 2018

Outstanding Graduate Award, State College of Florida, April 2015

Mathematics Department Memorial Award, State College of Florida, April 2015

Image Award, State College of Florida, April 2015

Outstanding Student in Physics, State College of Florida, April 2015

Amish Descendant Scholarship, Amish Descendant Scholarship Fund, 2013

Research and Teaching Experience

Research Assistant, Michigan State University, June 2018–present

Undergraduate Research Assistant (unpaid), Florida State University, Mar. 2017–Mar. 2018

Math and Physics Tutor, Tallahassee Community College, Aug. 2016–Mar. 2018

Publications

- (2022) G. Pederiva, A. Bazavov, B. Henke, **L. Hostetler**, D. Lee, H.-W. Lin, and A. Shindler. "Quantum state preparation algorithms for the Schwinger model with a theta term." (in preparation)
- (2021) **L. Hostetler**, J. Zhang, R. Sakai, J. Unmuth-Yockey, A. Bazavov, and Y. Meurice. "Clock model interpolation and symmetry breaking in $O(2)$ models". Phys. Rev. D **104** 054505 [arXiv:2105.10450](#)
- (2021) Y. Meurice, A. Bazavov, P. Dreher, E. Gustafson, **L. Hostetler**, R. Sakai, S.-W. Tsai, J. Unmuth-Yockey, and J. Zhang. "From tensors to qubits". PoS(LATTICE2021)608 [arXiv:2112.10005](#)
- (2021) **L. Hostetler**, J. Zhang, R. Sakai, J. Unmuth-Yockey, A. Bazavov, and Y. Meurice. "Clock model interpolation and symmetry breaking in $O(2)$ models". PoS(LATTICE2021)353 [arXiv:2110.05527](#)
- (2021) G. Pederiva, A. Bazavov, B. Henke, **L. Hostetler**, D. Lee, H.-W. Lin, and A. Shindler. "Quantum State Preparation for the Schwinger Model." PoS(LATTICE2021)047 [arXiv:2109.11859](#)
- (2018) **L. Hostetler**. "Numerical Mass Estimates from Correlation Functions in a 4D $SU(2)$ Higgs Model." Undergraduate Honors Thesis. DigiNole: FSU Digital Repository [link](#)
- (2015) **L. Hostetler** and R. Shollar. "Some Different Ways to Tackle the Basel Problem." The Pentagon, 75 no 1. pp 4-15. [link](#)

Presentations

- (2022) **L. Hostetler (speaker)**, R. Sakai, J. Zhang, J. Unmuth-Yockey, A. Bazavov, and Y. Meurice. "Symmetry Breaking in an Extended- $O(2)$ Model". The 39th International Symposium on Lattice Field Theory [link](#) [slides](#)
- (2022) **L. Hostetler (speaker)**, R. Sakai, J. Zhang, J. Unmuth-Yockey, A. Bazavov, and Y. Meurice. "Symmetry Breaking in an Extended- $O(2)$ Model". The QuLAT Collaboration [slides](#)
- (2021) **L. Hostetler (speaker)**, J. Zhang, R. Sakai, J. Unmuth-Yockey, A. Bazavov, and Y. Meurice. "Clock model interpolation and symmetry breaking in $O(2)$ models". The 38th International Symposium on Lattice Field Theory [link](#) [video](#) [slides](#)
- (2021) **L. Hostetler (speaker)**, J. Zhang, R. Sakai, J. Unmuth-Yockey, A. Bazavov, and Y. Meurice. "Generalized Clock Models". The QuLAT Collaboration [slides](#)
- (2021) **L. Hostetler (joint speaker)**, J. Zhang, R. Sakai, J. Unmuth-Yockey, A. Bazavov, and Y. Meurice. "Clock model interpolation and symmetry breaking in $O(2)$ models". The QuLAT Collaboration [slides](#)

(2021) **L. Hostetler (speaker)**, J. Zhang, R. Sakai, J. Unmuth-Yockey, A. Bazavov, and Y. Meurice. "Clock model interpolation and symmetry breaking in $O(2)$ models". APS March Meeting [link slides](#)

(2020) **L. Hostetler (speaker)**, R. Sakai, J. Zhang, J. Unmuth-Yockey, A. Bazavov, and Y. Meurice. "Clock model interpolation and symmetry breaking in $O(2)$ models". The QuLAT Collaboration [slides](#)

(2020) **L. Hostetler (speaker)**, R. Sakai, and A. Bazavov. "The q -state "Clock" Model: Monte Carlo Results and Comparison with TRG". The QuLAT Collaboration [slides](#)

(2015) **L. Hostetler (speaker)** and R. Shollar. "Some Different Ways to Sum a Series". 2015 Kappa Mu Epsilon National Convention, Embry-Riddle Aeronautical University. *Winner of Best Presentation Award, and invited to publish in Kappa Mu Epsilon's journal The Pentagon.* [slides](#)

(2015) A. Özgener and **L. Hostetler (joint speaker)**. *LaTeX Workshop*. 2015 Kappa Mu Epsilon National Convention, Embry-Riddle Aeronautical University.

(2014) **L. Hostetler (speaker)** and R. Shollar. "Some Different Ways to Sum a Series". 39th Suncoast Conference, Mathematical Association of America, University of South Florida. [slides](#)

Extracurricular and Volunteer Experience

Webmaster, Physics Graduate Organization (MSU), 2021–2022
Science specialist, Brain Bowl Club (SCF), Oct. 2014–May 2015
Officer, Zeta Xi Math Club (SCF), Oct. 2014–May 2015

Interests and Skills

- Quantum field theory
- Markov chain Monte Carlo methods, lattice QCD
- Quantum computing, quantum simulation, Qiskit
- High performance computing, MPI, OpenMP, CUDA

Papers Refereed

- Physical Review E (1)

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