

# Aidan Zabalo

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🌐 gitabaz.github.io

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📄 Aidan Zabalo

## Education

### Rutgers University

#### Ph.D. Physics

Advisor: Dr. Jedediah H. Pixley

New Brunswick, NJ

2016 - Present

### Florida State University

#### M.Sc. Physics

Thesis: *Experimental investigation of on-chip ESR techniques in multiple temperature regimes*

Advisor: Dr. Irinel Chiorescu

Tallahassee, FL

2014 - 2016

### Florida International University

#### B.Sc. Physics (*Magna Cum Laude*)

Minor: Mathematics

Miami, FL

2010 - 2014

## Technical Skills

PROGRAMMING: C/C++, Julia, Python, R, Perl, Mathematica, Matlab, Java, SQL, PHP, ROOT, OpenMP

SOFTWARE: Slurm Workload Manager, ITensor, Autodesk Inventor, Sonnet

LANGUAGES Fluent in English and Spanish with a working knowledge of French

## Graduate Research In Computational/Theoretical Physics

*Rutgers University - New Brunswick*

2016 - Present

- Developed and used highly efficient numerical algorithms in C, C++, and Julia to simulate the dynamics of complex quantum systems.
- Developed pipelines using Bash and Perl scripts to carry out simulations on high performance compute clusters running SLURM to manage resources.
- Data analysis on several hundreds of megabytes of data using Python and R to identify new phases of matter and develop methods for understanding the underlying physics.
- Multiple publications with over 100 total citations in respected physics journals.

## Teaching Experience

*Rutgers University - New Brunswick*

2016 - 2019

### Teaching assistant

- Led instruction in undergraduate Analytical Physics I/II recitation as well as Physics I/II lab courses.

## Publications

- [1] U. Agrawal, **A. Zabalo**, K. Chen, J. H. Wilson, A. C. Potter, J. H. Pixley, S. Gopalakrishnan, and R. Vasseur, Entanglement and charge-sharpening transitions in U(1) symmetric monitored quantum circuits (2021), arXiv:2107.10279 [cond-mat.dis-nn] .
- [2] **A. Zabalo** and E. A. Yuzbashyan, *Time reversal symmetry protected chaotic fixed point in the quench dynamics of a topological p-wave superfluid*, Physical Review B **104**, 104505 (2021).
- [3] **A. Zabalo**, M. J. Gullans, J. H. Wilson, R. Vasseur, A. W. W. Ludwig, S. Gopalakrishnan, D. A. Huse, and J. H. Pixley, Operator scaling dimensions and multifractality at measurement-induced transitions (2021), arXiv:2107.03393 [cond-mat.dis-nn] .

- [4] C. Rylands, E. A. Yuzbashyan, V. Gurarie, **A. Zabalo**, and V. Galitski, *Loschmidt echo of far-from-equilibrium fermionic superfluids*, Annals of Physics , 168554 (2021).
- [5] **A. Zabalo**, M. J. Gullans, J. H. Wilson, S. Gopalakrishnan, D. A. Huse, and J. H. Pixley, *Critical properties of the measurement-induced transition in random quantum circuits*, Phys. Rev. B **101**, 060301(R) (2020).

## Honors and Awards

Rutgers University, Dr. Samuel Marateck Graduate Fellowship	2021
Rutgers University, RDI <sup>2</sup> Fellowship for Excellence in Computational and Data Science	2019
Rutgers University, GAANN Graduate Fellowship	2016
Florida State University, Yung-Li Wang Graduate Fellowship	2016
Florida State University, APS Bridge Program	2014
Phi Beta Kappa, Member	2014
Florida Academic Scholars, Florida Bright Futures Scholarship Award	2010
Florida International University, Presidential Scholarship	2010

## References

### Jedediah H. Pixley

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 Rutgers University  
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 Phone: (848) 445 9029

### Emil A. Yuzbashyan

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### David A. Huse

Professor  
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 Princeton University  
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