

# Thaís Victa Trevisan

## PERSONAL INFORMATION

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**Work Address:**

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Iowa State University  
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[Google Scholar](#)

## PROFESSIONAL EXPERIENCE

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Postdoctoral researcher

Ames, Iowa, USA  
*October, 2019-Present*

Affiliation: Iowa State University and Ames Laboratory

Supervisor: Peter P. Orth

## EDUCATION

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University of Campinas

*Ph.D. in Condensed Matter Theory*

Campinas, São Paulo, Brazil  
*March, 2015-September, 2019*

- Thesis title: Exotic Phenomena in Low-Dimensional Systems
- Advisor: Prof. Amir O. Caldeira

University of Minnesota

*Fapesp BEPE Graduate Student Research Fellowship*

Minneapolis, MN, USA  
*October, 2016-September, 2017*

- Supervisor: Prof. Rafael M. Fernandes

University of Campinas

*Master of Physics*

Campinas, São Paulo, Brazil  
*March, 2013-June, 2015*

- Master thesis title: Current-carrying states in simple aromatic molecules
- Advisor: Prof. Amir O. Caldeira

University of Campinas

*Bachelor in Physics*

Campinas, São Paulo, Brazil  
*March, 2009-December, 2012*

## PUBLICATIONS

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1. **Thaís V. Trevisan**, Pablo Villar Arribi, Olle Heinonen, Robert-Jan Slager, Peter P. Orth  
Title: Bicircular Light Floquet Engineering of Magnetic Symmetry and Topology and Its Application to the Dirac Semimetal  $\text{Cd}_3\text{As}_2$   
[Phys. Rev. Lett.](#) **128**, 066602 (2022)
2. Na Hyun Jo, Yun Wu, **Thaís V. Trevisan**, Lin-Lin Wang, Kyungchan Lee, Brinda Kuthanazh, Benjamin Schrunki, S. L. Bud'ko, P. C. Canfield, P. P. Orth, Adam Kaminski  
Title: Visualizing band selective enhancement of quasiparticle lifetime in a metallic ferromagnet  
[Nature Communications](#), **12**, 7169 (2021)

- Kyungchan Lee, Gunnar F. Lange, Lin-Lin Wang, Brinda Kuthanazhi, **Thais V. Trevisan**, Na Hyun Jo, Benjamin Schruck, Peter P. Orth, Robert-Jan Slager, Paul C. Canfield, Adam Kaminski
3. Title: Discovery of a weak topological insulating state and van Hove singularity in triclinic RhBi<sub>2</sub>  
[Nature Communications, 12, 1855 \(2021\)](#)  
S. X. M. Riberolles, **T. V. Trevisan**, B. Kuthanazhi, T. W. Heitmann, F. Ye, D. C. Johnston, S. L. Bud'ko, D. H. Ryan, P. C. Canfield, A. Kreyssig, A. Vishwanath, R. J. McQueeney, L. -L. Wang, P. P. Orth, B. G. Ueland
  4. Title: Magnetic crystalline-symmetry-protected axion electrodynamics and field-tunable unpinned Dirac cones in EuIn<sub>2</sub>As<sub>2</sub>  
[Nature Communications, 12, 999 \(2021\)](#)  
**Thais V. Trevisan**, Gustavo M. Monteiro and Amir O. Caldeira
  5. Title: Enhancement of diamagnetism by momentum-momentum interaction: application to benzene  
[Phys. Rev. B 103, L180402 \(2021\)](#)  
**T. V. Trevisan**, Gustavo M. Monteiro and A. O. Caldeira
  6. Title: Effective momentum-momentum coupling in a correlated electronic system  
[Phys. Rev. B 102, 125128 \(2020\)](#)  
Maria N. Gastiasoro, **Thais V. Trevisan** and Rafael M. Fernandes
  7. Title: Anisotropic superconductivity mediated by ferroelectric fluctuations in cubic systems with spin-orbit coupling  
[Phys. Rev. B 101, 174501 \(2020\)](#)  
**Thais V. Trevisan**, Michael Schütt and Rafael M. Fernandes
  8. Title: Unconventional multi-band superconductivity in bulk SrTiO<sub>3</sub> and LaAlO<sub>3</sub>/SrTiO<sub>3</sub> interfaces  
[Phys. Rev. Lett. 121, 127002 \(2018\)](#)  
**Thais V. Trevisan**, Michael Schütt and Rafael M. Fernandes
  9. Title: Impact of disorder on the superconducting transition temperature near a Lifshitz transition  
[Phys. Rev. B 98, 094514 \(2018\)](#)

## SUBMITTED MANUSCRIPTS

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10. Noah F. Berthussen, **Thais V. Trevisan**, Thomas Iadecola, Peter P. Orth  
Title: Quantum dynamics simulations beyond the coherence time on NISQ hardware by variational Trotter compression  
[arXiv:2112.12654 \(2021\)](#)
11. A. Alexandradinata *et al.*  
Title: The Future of the Correlated Electron Problem  
[arXiv:2010.00584 \(2020\)](#), submitted to *Reviews of Modern Physics*

## RESEARCH INTERESTS

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- Topological phases of matter
- Floquet engineering
- Unconventional superconductivity
- Disordered superconductors
- Non-linear responses of many-body systems
- Strongly correlated quantum materials



University of Campinas  
Teaching Assistant

Campinas, São Paulo, Brazil  
February 2016 - July 2016

- Assistantship on undergraduate Quantum Mechanics Course.

## INVITED TALKS

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*University of Minnesota*

*January 19th, 2021*

Minneapolis, MN, USA

- Talk title: Tuning magnetic symmetries and topology with bicircular light.

*International Institute of Physics virtual seminars, UFRN*

*October 23th, 2020*

Online

- Talk title: Manipulating symmetry and topology using light (available on [youtube](#) in Portuguese).

## TALKS, POSTER PRESENTATIONS AND CONFERENCES ATTENDED

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*2021 EFRC-Hub-CMS-CCS Principal Investigators' Meeting*

*October 18th-19th, 2021*

Online

- Poster title: Magnetic axion insulator and exotic surface states in  $\text{EuIn}_2\text{As}_2$

*Correlations in Novel Quantum Materials*

*June 9th-11th, 2021*

Online

Max Planck Institute for Solid State Research, Stuttgart, Germany.

- Poster title: Axion insulator and exotic surface states protected by magnetic crystalline symmetries in  $\text{EuIn}_2\text{As}_2$

*American Physical Society March Meeting*

*March 15th-19th, 2021*

Online

- Talk title: Controlling symmetry and topology via bicircular light: application to  $\text{Cd}_3\text{As}_2$

*CATS 2020 annual meeting*

*September 28th-October 2nd, 2020*

Online

- Talk title: Controlling symmetry and topology using bicircular light

*Microscopies of Superconductivity in Perovskite Oxides: Challenges, Hurdles and Enigmas (MISPOCHE)*

*July 20th-23th, 2020*

Online

*The Future of the Correlated Electron Problem Workshop*

*January 27th-29th 2020*

Baltimore, MD, USA

*Brazilian Physical Society Autumn meeting*

*May 06th-11th, 2018*

Foz do Iguaçu, Paraná, Brazil

- Talk title: Suppression of superconductivity across the Lifshitz transition in bulk  $\text{SrTiO}_3$  and  $\text{LaAlO}_3/\text{SrTiO}_3$  interfaces

*American Physical Society March Meeting*

*05-09 March, 2018*

Los Angeles, California, USA

- Talk title: Suppression of superconductivity across the Lifshitz transition in bulk  $\text{SrTiO}_3$  and  $\text{LaAlO}_3/\text{SrTiO}_3$  interfaces

*Advanced School and Workshop on Correlations in Electron Systems - from Quantum Criticality to Topology*

*6-17 August, 2018*

Trieste, Italy

- Poster title: Impact of disorder on the superconducting transition temperature near a Lifshitz transition: application to SrTiO<sub>3</sub>

*School of Unconventional Superconductivity: Experiment and Theory*  
7-19 August, 2017

Cargese, Corsica, France

- Poster title: Impact of disorder on the superconducting transition temperature near a Lifshitz transition
- Contributed talk: Impact of disorder on the superconducting transition temperature near a Lifshitz transition

*Gordon Research Conferences*  
04-09 June, 2017

Waterville Valley, New Hampshire, USA

- Poster title: Impact of disorder on the superconducting transition temperature near a Lifshitz transition

*XXXVII Paulo Leal Ferreira Congress (CPLF)*  
01-03 October, 2014

São Paulo, Brazil

- Poster title: Current-carrying states in simple molecules

*Gleb Wataghin Institute of Physics winter school-Emergent magnetism and superconductivity*  
20-31 July, 2013

Campinas, São Paulo, Brazil

*Advanced school on quantum foundations and open quantum systems*  
16-28 July, 2012

João Pessoa, Paraíba, Brazil

## OUTREACH ACTIVITIES

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*Science Girl. Girl Science*

*Federal University of ABC (UFABC), Santo André, São Paulo, Brazil*

September-October 2021

Event aimed at girls at middle school consisting of lectures and practical activities carried out by Federal University of ABC. One of the goals is to show the role of women scientists in different areas of activity ([webpage](#)).

- Invited scientist.
- Talk: What is physics? (available on [youtube](#) in Portuguese).

*Go Further Girls STEM Conference*

*Iowa State University, Ames, IA, USA*

2020-present

Program for Women in Science and Engineering

- Facilitator in the cryptography workshop session Crack the secret pirate code (organized by Prof. Peter P. Orth).
- Facilitator in session Quantum tic-tac-toe (organized by Prof. Thomas Iadecola and Prof. Peter P. Orth).

*Physics During Vacations*

*University of Campinas, Campinas, Brazil*

July 2013

Program organized by Gleb Wataghin Institute of Physics, University of Campinas, consists of advanced physics lectures aimed for high-school students.

- Lectures: Particle-wave duality

## PROFESSIONAL SERVICES

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- Peer reviewing for scientific journal npj Quantum Materials.
- Peer reviewing for scientific journal Brazilian Journal of Physics.
- CATS representative to the BES Early Career Network.