Francisco Leal Machado

Curriculum Vitae

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Education

2016–Present **University of California, Berkeley**, *Berkeley, CA*, USA
Candidate for PhD in Physics.
2018 – Master Degree

2013–2016 **Massachusetts Institute of Technology**, *Cambridge, MA*, USA
Bachelor of Science Degree in Physics,
GPA – 5.0/5.0.

2012–2013 **Universidade de Coimbra**, *Coimbra*, Portugal
Candidate for Licence in Physics,
GPA – 5.0/5.0.

Awards

2018 Outstanding Graduate Student Instructor Award

2017 Leo Falicov Fellowship

2016–2017 Physics Department Fellowship

2016 Philip Morse Memorial Award

2016 Sigma Pi Sigma Inductee

2016 Phi Beta Kappa Inductee

2015 Winner of the Edward C. Pickering Award for the most Outstanding Original Project in the MIT Physics Junior Lab

2013 3% Best Students Award at the University of Coimbra

2013 Bronze Medal at the ACM SouthWestern Regional Contest

2012 Bronze Medal at the International Physics Olympiads

2012 Bronze Medal at the International Olympiads of Informatics

2012 Gold Medal at the Portuguese University Programming Marathon

2012 Third Place in the Portuguese Olympiads of Informatics

2011 Honorable Mention at the IberoAmerican Mathematics Olympiads

2011, 2012 Silver Medal at the Portuguese Mathematics Olympiads

Publications

2018 T. Mittiga, S. Hsieh, C. Zu, B. Kobrin, ***Francisco Machado***, P. Bhattacharyya, N. Z. Rui, A. Jarmola, S. Choi, D. Budker, and N. Y. Yao
Phys. Rev. Lett. 121 246402 (2018),
Imaging the Local Charge Environment of Nitrogen-Vacancy Centers in Diamond.

2017 ***Francisco Machado***, Nicholas Rivera, Hrvoje Buljan, Marin Soljačić, and Ido Kaminer
ACS Photonics 2018, 5, 8, 3064-3072,
Shaping Polaritons to Reshape Selection Rules.

2016 Paul Torrey, Sarah Wellons, ***Francisco Machado***, Brendan Griffen, Dylan Nelson, Vicente Rodriguez-Gomez, Ryan McKinnon, Annalisa Pillepich, Chung-Pei Ma, Mark Vogelsberger, Volker Springel and Lars Hernquist
MNRAS 454 3 (2015),
An analysis of the evolving comoving number density of galaxies in hydrodynamical simulations.

Pre-Prints

2019 Bingtian Ye, ***Francisco Machado***, Christopher David White, Roger S. K. Mong, Norman Y. Yao
arXiv:1902.01859,
Emergent hydrodynamics in Floquet quantum systems.

2018 Dominic V. Else, ***Francisco Machado***, Chetan Nayak and Norman Y. Yao
arXiv:1809.06369,
An improved Lieb-Robinson bound for many-body Hamiltonians with power-law interactions.

2018 S. Hsieh, P. Bhattacharyya, C. Zu, T. Mittiga, T. J. Smart, ***Francisco Machado***, B. Kobrin, T. O. Höhn, N. Z. Rui, M. Kamrani, S. Chatterjee, S. Choi, M. Zaletel, V. V. Struzhkin, J. E. Moore, V. I. Levitas, R. Jeanloz, N. Y. Yao
arXiv:1812.08796,
Imaging stress and magnetism at high pressures using a nanoscale quantum sensor.

2017 ***Francisco Machado***, Gregory D. Meyer, Dominic V. Else, Chetan Nayak and Norman Y. Yao
arXiv:1708.01620,
Exponentially Slow Heating in Short and Long-range Interacting Floquet Systems.

Talks

2019 **APS March Meeting**, Boston, MA.
An improved Lieb-Robinson bound for many-body Hamiltonians with power-law interactions

2018 **APS March Meeting**, Los Angeles, CA.
Prethermal Phases in Long-Range Interacting Systems

2017 **Bay Area Cold Atom Meeting (BACAM)**, Berkeley, CA.
Prethermalization and Time-Crystalline Order in Long-Range Interacting Systems

2017 **CLEO**, San Jose, CA.
Shaping Polaritons to Reshape Selection Rules

2017 **APS March Meeting**, New Orleans, LA.
Prethermal Time Crystals

Posters

2017 **DAMOP - Division of Atomic Molecular & Optical Physics**, Sacramento, CA.
Prethermal Time Crystals

2013 **International Conference on Stem Cells for Drug Screening and Regenerative Medicine**.
Following the Stochastic Dynamics of Nanog Through a Fluorescent Reporter - A Computational Study

Summer Schools

2018 **Quantum Connections Summer School**, Stockholm, Sweden.

2015 **Novos Talentos Em Matemática - Dynamical Systems Summer School**, Lisbon, Portugal.