Tadeu Tassis

Personal information

Citizenship: Brazilian
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Education

PhD in Physics, Federal University of ABC (UFABC), Brazil **2019–Present**
Dissertation: Trapped ions beyond low-intensity regimes
Advisor: Prof. Fernando L. Semião

MSc in Physics, Federal University of Espírito Santo (UFES), Brazil **2017–2019**
Thesis: Topological solitons in scalar field theories in (1+1)-dimensions
Advisor: Prof. Gabriel Luchini

BSc in Physics, Federal University of Espírito Santo (UFES), Brazil **2013–2017**
Thesis: The Fermi-Pasta-Ulam-Tsingou problem (in Portuguese)
Advisor: Prof. Gabriel Luchini

Publication list

[1] *Thermal transport through a single trapped ion under strong laser illumination*, **T. Tassis**, F. Brito, and F. L. Semião, arXiv:2402.03937 (*Currently under review*)

[2] *Trapped ions beyond carrier and sideband interactions*, **T. Tassis** and F. L. Semião, Physical Review A 107, 042605 (2023)

[3] *Collective coordinates for the hybrid model*, C. F. S. Pereira, E. S. Costa Filho, and **T. Tassis**, International Journal of Modern Physics A 38, 2350006 (2023)

[4] *Some novel considerations about the collective coordinates approximation for the scattering of ϕ^4 kinks*, C. F. S. Pereira, G. Luchini, **T. Tassis**, and C. P. Constantinidis, Journal of Physics A: Mathematical and Theoretical 54, 075701 (2021)

[5] *BPS states for scalar field theories based on g_2 and su(4) algebras*, G. Luchini and **T. Tassis**, Journal of High Energy Physics 2020, 11 (2020)

Scholarships

PhD Scholarship from CAPES **2021–2024**

PhD Scholarship from UFABC **2019–2021**

MSc Scholarship from CAPES **2017–2019**

Undergrad Research Scholarship from UFES **2016–2016**

Undergrad Research Scholarship from UFES **2015–2016**

Research projects

Expanding the regime of operation of trapped ions in quantum technologies **2021–2024**
Funding Agency: FAPESP
Project supervisor: Prof. Fernando L Semião

Solitons and Q-Balls **2019–2021**
Funding Agency: FAPES
Project supervisor: Prof. Gabriel Luchini

Events

VIII Paraty Quantum Information Workshop, Brazil, 2023
Poster: *Trapped ions beyond carrier and sideband interactions*

XLI Paulo Leal Ferreira Physics Conference, IFT-Unesp, Brazil, 2018
Poster: *Scattering of an electron by a Dirac monopole*

II School on Theoretical High Energy Physics, IFSC-USP, Brazil, 2018

School on Theoretical High Energy Physics, IFSC-USP, Brazil, 2016

Short Course on: Solitons in Classical Field Theories, IFSC-USP, Brazil, 2016

XXVI Winter Physics School, UFMG, Brazil, 2015

Activities

Teaching assistant

Classical mechanics II, UFABC, Brazil, 2022
Lecturer: Prof. Fernando L. Semião

Thermal phenomena, UFABC, Brazil, 2021
Lecturer: Prof. Roberto M. Serra

Examining commitees

BSc thesis defense of João Vitor Bastos Del Piero, UFES, Brazil, 2019

Skills

Languages

Portuguese, native
English, advanced
Spanish, intermediate reading, otherwise basic
French, basic

Programming languages

Python, experience with NumPy, SciPy, Matplotlib, and QuTiP
Julia, experience with QuantumOptics.jl
C/C++, experience implementing basic numerical methods (e.g., RK4)
Mathematica, experience with symbolic calculations

General software tools

Linux, **LaTeX**, **HTML/CSS**, **Git**

Graphics software

Inkscape, **TikZ**, **Blender**