

Tadeu Tassis

Personal information

Citizenship: Brazilian

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Education

PhD in Physics, Federal University of ABC (UFABC), Brazil **2019–2024**

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

<i>Expanding the regime of operation of trapped ions in quantum technologies</i>	2021–2024
Funding Agency: FAPESP	
Project supervisor: Prof. Fernando L Semião	
<i>Solitons and Q-Balls</i>	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 committees

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**