João Augusto Sobral da Silva

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Last updated on May 18, 2021

Education

University of São Paulo — São Carlos, SP
Master of Science in Theoretical Physics (In progress) — *Jan. 2020 – Dec. 2021*
GPA: 5.00/5.00
Funding: *CAPES* via Grant No. 88887.474253/2020-00

University of Brasília — Brasília, DF
Bachelor of Science in Physics — *Aug. 2015 – Dec. 2019*
GPA: 4.15/5.00

Thesis

Master Thesis (in progress) — Mar. 2020 –
University of São Paulo — *São Carlos, SP*

- Original Title: Investigating spin liquids via projected wave functions. Supervision: Prof. Dr. Eric de Castro e Andrade.

Undergraduate Thesis — Mar. 2018 – Nov. 2019
University of Brasília — *Brasília, DF*

- Original Title: Decaimento de Férmions Acelerados, Efeito Unruh e Aplicações no Regime Semi-Clássico (Portuguese only). Supervision: Prof. Dr. Clóvis Achy Soares Maia.

Experience

Teacher Assistant — Mar. 2021 – July 2021
University of São Paulo — *São Carlos, SP*
Introduction to Computational Methods — Funding: USP

Undergraduate Research Assistant — March 2016 – March 2019
University of Brasília — *Brasília, DF*

- Analyzed multi-coincidence spectroscopy data for the aminoacid alanine and classified the most probable photo-fragmentation channels between 11-18 eV, under the supervision of Prof. Dra. Alexandra Mocellin. Final Report - in portuguese only - (Mar. 2018 - Mar. 2019).
- Developed a genetic algorithm to study potential energy curves from diatomic molecules, under the supervision of Prof. Dr. Luiz Antônio Ribeiro Junior. Final Report - in portuguese only - (Mar. 2016 - Mar. 2017).

Funding: University of Brasília Foundation (FUB).

Teacher Assistant (Volunteer) — Mar. 2016 – Dec. 2018
University of Brasília — *Brasília, DF*

Calculus 1	Mar. 2016 – Jul. 2016
Laboratory of Mechanics	Mar. 2017 – Jul. 2017
Computational Methods A (Non-official)	Aug. 2017 – Dec. 2017
Waves, Optics and Thermodynamics	Aug. 2017 – Dec. 2017
Laboratory of Oscillations, Waves and Fluids	Mar. 2018 – Jul. 2018
Methods of Experimental Physics	Aug. 2018 – Dec. 2018

Publications

Book Chapters

- L.S.F. Olavo, **S. S. João Augusto**, FERREIRA, M. .The Schrödinger Equation Written in the Second Quantization Formalism: Derivation from First Principles. In: Valentino A. Simpao; Hunter C. Little. (Org.). Understanding the Schrödinger Equation: Some [Non]Linear Perspectives. 1ed. New York: Nova Science Publishers, Inc., **2020**, v. 2, p. 19-36. ISBN: 978-1-53617-662-9.

Papers in Education

- L.S.F. Olavo ; S. S. João Augusto ; FERREIRA, M. . The Schrödinger equation written in the second quantization formalism: derivation from first principles. Revista do Professor de Física, v. 5, p. 24-39, 2021.

Scientific Conferences, Courses and Meetings

- CCBPP - Entanglement for Strongly Correlated Systems (2021);
- ICTP - The Hitchhiker's Guide to Condensed Matter and Statistical Physics: Machine Learning for Condensed Matter (2021);
- IFSC/USP - 10ª Semana Integrada da Graduação e Pós-Graduação do Instituto de Física de São Carlos: *Poster presentation: Líquidos de Spin via Construção de Partons* (2020);
- IF/UnB - 25o Congresso de Iniciação Científica da UnB e do 16o Congresso de Iniciação Científica do DF. *Poster presentation: Estudo da foto-fragmentação do aminoácido alanina nos estados de valência usando espectroscopia de multi-coincidência* (2019);
- IF/UnB - 24º Congresso de Iniciação Científica da UnB e 15º Congresso de Iniciação Científica do DF. *Poster presentation: Um Algoritmo Genético para o Ajuste de Curvas de Energia Potencial de Interações Atômicas.* (2018);
- IFT/UNESP - First Joint ICTP-Trieste/ICTP-SAIFR School on Particle Physics (2018);
- CBPF - 'XV Atividades Formativas de Verão & II Escola Professor Global'(2018);
- FUP/Planaltina - ' First School of Programming Physical Systems of PPG-CIMA' - October (2017): Lectured a one week course called 'Introduction to Fortran 90' to other undergraduate students;
- IF/UnB - 22o Congresso de Iniciação Científica da UnB e do 16o Congresso de Iniciação Científica do DF. *Poster presentation: Uma Técnica de Otimização Utilizando Algoritmos Genéticos para Encontrar Extremos de Funções* (2019);
  Honorable mention.
- IF/UnB – 'X Semana da Física' (October 2015), 'XI Semana da Física' (October 2016), 'XII Semana da Física' (October 2017), 'XIII Semana da Física' (October 2018).

Technical Skills

Languages: Fortran, Python, LaTeX, bash/shell (basics), and brief contact with C.
Software: Wolfram Mathematica, Qtiplot, gnuplot, LyX, Libre Office, Microsoft Office, Inkscape.
Libraries: LAPACK, pandas, NumPy, Matplotlib, SciPy.

Complementary Formation

Topics in Quantum Field Theory — Jan. 2019 - Feb. 2019
University of Brasília — *Brasília, DF*
Ministered by Prof. Dr. Arsen Melikyan. — *Workload: 45h.*

Topics in Interpretations of Quantum Mechanics — Jan. 2019 - Feb. 2019
University of Brasília — *Brasília, DF*
Ministered by Prof. Dr. Olavo Leopoldino da Silva Filho. — *Workload: 45h.*

English — 2012 - 2016
Centro Interescolar de Línguas do Guará (CILG) — *Brasília, DF*
Workload: 654h.

Languages

Brazilian portuguese (native), English (advanced).