

Luis Eduardo Sánchez González

Bachelor in Physics Engineering

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Education

2017 - 2022 **Autonomous University of Coahuila, Department of Physics and Mathematics,**
Saltillo, Coahuila, México.
Bachelor in Physics Engineering

Research experience

- Oct 2022- Present** **Autonomus University of Coahuila, Coahuila, México**
Research assistant - Supervisor: Dr. Ricardo Perez Martinez
We studied some applications of group theory in string theory. We analyze 2D orbifolds and look for patterns in their symmetries. Recently we obtained a some interesting analogies with crystallography.
- May 2022- Present** **Autonomus University of Baja California, Ensenada Baja California**
Member of Dr. Ramon Carrillo-Bastos research group
We studied the transport and electronic propierties of 2D Dirac materials. The goal is to obtain the optical conductivity of similar graphene-like systems.
- Oct 2021- Present** **Autonomus University of Coahuila, Mexico and IMDEA Nanoscience, Spain**
Thesis research project - Supervisor: Dr. Pierre Anthony Pantaleon Peralta
I performed in quantum metric and topological propierties of 2D materials. We calculated the metric tensor, Berry phase, and Riemann curvature of topological graphene-like systems and we characterize the different topological phases.
- May 2022- Aug 2022** **Autonomus University of Baja California, Ensenada, Baja California**
Summer student - Supervised by Dr. Ramon Carrillo Bastos
I worked on Dirac systems. We proposed a hybrid model called "Kekulé-modulated $\alpha - T_3$ model" and we calculate an analytical expression for the dispersion relation.

Teaching experience

- Oct 2022- Dec 2022** **National College of Technical Professional Education, CONALEP I, Saltillo, Coahuila**
High School Teacher - Calculus & Physics
I taught classes for last-year High School students.
- Aug 2022- Dec 2022** **Autonomous University of Coahuila, Department of Physics and Mathematics**
Teaching assistant - Physics Laboratory
I was teaching assistant to Dr. Carlos Eduardo Rodríguez García in Physics Laboratory for physics engineering students.
- Aug 2021- Dec 2022** **Autonomous University of Coahuila, Department of Physics and Mathematics**
Teaching assitant - Linear Algebra & Numerical Methods
I was teaching assistant to M.S. Maria Guadalupe Godina Cubillo in Linear Algebra and Numerical Methods for physics engineering students.
- Aug 2022** **Autonomous University of Coahuila, Department of Physics and Mathematics**
Teacher and Instructor - Propaedeutic Courses in Physics
I taught a one-month introductory physics courses for incoming undergraduate in Physics Engineering.

**July 2020-
Aug 2022** **Autonomous University of Coahuila, Department of Physics and Mathematics**
Teacher and instructor - Programming courses
I taught the course "Introduction to Python Programming" for second-year Physics Engineering students.

Talks & presentations

- 22th Nov,
2022** **El modelo de Haldane y los aislantes topológicos (Haldane model and topological insulators)**
Short Talk - Online
1st Student Congress of Scientific and Technological Research
- 25th Oct,
2022** **Kekulé-modulated $\alpha - T_3$ model**
Short Talk - Online
III Annual Virtual Meeting of Condensed Matter and Nanotechnology Division of SMF
- 26th Oct,
2022** **Teoría de grupos y simetría en la vida cotidiana (Group theory and symmetry in daily life)**
Talk - Online
55° National Congress of Mathematical Mexican Society
- 26th Oct,
2022** **Clasificación de materiales topológicos (Clasification of topological materials)**
Short Talk - Online
55° National Congress of Mathematical Mexican Society
- 6th Oct,
2022** **Modelo $\alpha - T_3$ con periodicidad Kekulé (Kekulé-modulated $\alpha - T_3$ model)**
Poster - Palace of conventions, Zacatecas Mexico
LXV National Conferences of the Mexican Physical Society
- 31th Aug,
2022** **Modelo $\alpha - T_3$ con periodicidad Kekulé (Kekulé-modulated $\alpha - T_3$ model)**
Short Talk - Online
XXVII International Congress of Pacific Research Summer
- 25th May,
2022** **Python Avanzado con Plotly (Advanced Python with Plotly)**
Workshop - Autonomus University of Coahuila
Science & Technology Fair 2022

Certifications

**Jan 2023 -
Jan 2028** **Software Development**
by National Council for Standardization and Certification of Labor Competencies (CONOCER)
Certification by Public Education Secretary (SEP) and CONOCER as a software developer. Specifically certified as a competent person in software development based on specifications and unit testing.

Skills

- **Programming**
Python - Numpy, Matplotlib, Plotly, PyQt, Sympy, Scipy y Pandas (Advanced)
C/C++ - (Intermediate)
Scientific computing - Fortran, Julia and Wolfram Mathematica (Basic)
Web Development - HTML, CSS, JavaScript, TypeScript (Basic)
Frameworks - Angular, Ionic (Basic)
- **Software**
LaTeX - TexMaker and Overlap (4 years)
GNU/Linux - (4 years)
Anaconda - Conda, Jupyter, Markdown, QtConsole, Spyder and VS (3 years)
Git/Github - (2 years)

Open Source Project

2021 **physicspy: Physics with Python (v0.1.x)**

Scientific computational package in Python

I created a package to solve problems in computational physics. Mainly, physicspy is for educational purposes.

Languages

- **Spanish (Native)**
- **English (TOEFL score 54)**

Last update on March 11th, 2023