

# Maria Fernanda **Torres Cabrera**

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## Summary

Graduate student with bachelor's degree in Physics.

## Work Experience

### Constitutional Service

Colima, Mexico

ASSISTANCE FOR SOLVING PROBLEMS AND QUESTIONS ABOUT PHYSICS AND MATHEMATICS TO HIGH SCHOOL STUDENTS

Apr. 2021 - Jul. 2021

- During this service, interested students requested consultancies for several topics in physics and mathematics. I gave physics and mathematics sessions for high school and undergraduate through a platform, during which conceptual doubts were resolved, reviewed exercises, and topics proposed by the attendees.

### Social Service

Colima, Mexico

GRADING ASSIGNMENTS FROM SEMESTERS BELOW

Aug. 2019 - Jul. 2021

- Volunteer for grading homework from Introduction to Physics, Thermodynamics, and Mathematical Methods.

## Education

### University of Colima

Colima, Mexico

LICENTIATE DEGREE IN PHYSICS

Aug. 2018 - June. 2022

- GPA: 9.2/10
- Undergraduate graduation, June 2022

## Research Interest

Nuclear Physics

Particle Physics

Statistical Physics

## Skills

**Computer Language** Python, HTML, C++

**Software and Tools** Mathematica,  $\LaTeX$ , Ubuntu and ROOT

**Languages** English (Level: B2), Spanish (native)

## Certifications

2021 **Test of English as a Foreign Language (TOEFL)**, Score: 83. Educational Testing Service TOEFL iBT®

Colima, Mexico

2022 **Duolingo English Test**, Total Score: 130

Colima, Mexico

## Relevant Courses

### Undergraduate Physics Courses

Colima, Mexico

Aug. 2018 - Jun. 2021

- Classical Mechanics
- Thermodynamics
- Electricity and Magnetism
- Modern Physics
- Analytical Mechanics
- Electrodynamics
- Quantum Mechanics I
- Quantum Mechanics II
- Statistical Mechanics
- Particle Physics
- Introduction to Solid State

## Undergraduate Math Courses

Colima, Mexico

Aug. 2018 - Jan. 2020

- Linear Algebra
- Differential Equations
- Differential, Integral and Vector Calculus
- Complex Analysis
- Mathematical Methods

## Books Used

### Physics Books

Colima, Mexico

Aug. 2018 - Jun. 2021

- Fundamentals of Physics, Halliday and Resnick
- Introduction to Modern Physics, McGervey J.
- Classical Dynamics of Particles and Systems, Marion and Thornton
- Introduction to Electrodynamics, Griffiths D.
- Introduction to Quantum Mechanics, Griffiths D.
- A Modern Course in Statistical Physics, Reichl L.
- Introduction to Solid State, Kittel C.

### Math Books

Colima, Mexico

Aug. 2018 - Jan. 2020

- Calculus: One and Several Variables Vol I and II, Salas, Hille and Etgen
- Linear Algebra Done Right, Axler S.
- Differential Equations, Zill and Cullen
- Complex Analysis, Gamelin T.
- Mathematical Methods for Physicists, Arfken, Weber, and Harris

## Honors & Awards

### INTERNATIONAL

2020 **Bronze Medal**, University Physics Competition

Online

### LOCAL

2021 **Excellence Grant**, Semester Enrollment Excellence Scholarship

Online

2021-2022 **Undergraduate Research Scholarship**, Thesis Project

Colima, Mexico

2022 **Excellence Grant**, Semester Enrollment Excellence Scholarship

Online

## Projects & Publications

### Projects

Colima, Mexico

AUTHOR OF: "WAVE PACKETS DYNAMICS IN COLLAPSE MODEL INTERPRETATION OF QUANTUM MECHANICS"

2022

- Licentiate degree in Physics.

### Publications

Colima, Mexico

FIRST AUTHOR OF A LETTER

2022

Torres F., Aranda A., Modak S. **New insights on the quantum-classical division in light of Collapse Models**. <https://arxiv.org/abs/2210.10603>

## Extracurricular Activity

### DUAL CP Institute of High Energy Physics

Colima, Mexico

VOLUNTEER

Jan. 2020

### Physics and Mathematics Week Workshop

Colima, Mexico

VOLUNTEER

Feb. 2020

### Heisenberg Institute

Colima, Mexico

VOLUNTEER

Feb. 2020

**4th Science Workshop for Women**

VOLUNTEER

Colima, Mexico

Mar. 2020

**Fermilab Course by Jonathan Paley**

PARTICIPANT

Online

Mar. 2020

**Conferences and Colloquiums at University of Colima**

ATTENDED

Colima, Mexico

2018-2020

**5th Science Workshop for Women**

VOLUNTEER

Online

Mar. 2021

**CUWiP, Conferences for Undergraduate Women in Physics**

PARTICIPANT

Online

Apr. 2021

**Summer School in Astrophysics by IRyA, UNAM**

PARTICIPANT

Online

Jul. - Aug. 2021

**6th Science Workshop for Women**

VOLUNTEER

Colima, Mexico

Mar. 2022

**DUAL CP Institute of High Energy Physics**

VOLUNTEER

Colima, Mexico

June 2022

**Webmaster for WiPS at University of Houston**

WEBMASTER

Houston, Texas

Present

**TA at University of Houston**

TEACHER ASSISTANT FOR COLLEGE STUDENTS

Houston, Texas

2022-2023

**7th Science Workshop for Women**

GUEST

Online

Feb. 2023

**Research Day at University of Houston**

PARTICIPANT FROM WiPS ORGANIZATION

Houston, Texas

Feb. 2023

**TA at The University of Houston - Dalian Maritime University (UH-DMU) International Institute**

TEACHER ASSISTANT FOR COLLEGE STUDENTS

Online

Jun. - Jul. 2023

## Additional Information

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**Travelling**    Passport, U.S. Visa and Driver's license