

Melissa Almanza Soto

Personal Information

E-mail melissa.almanza@ific.uv.es

Affiliation

2023- **Instituto de Física Corpuscular**, *Contratada predoctoral CSIC*, Universitat de València, Spain, **Research topics:** R&D on compact highly granular silicon calorimeters and optimization of reconstruction algorithms for electromagnetic shower studies for LUXE and future colliders.
Supervisor: Dr. Adrián Irlés

Education

2021–2023 **McGill University**, *M.Sc. in Physics*, Montreal, Quebec, Canada.
2015–2019 **Universidad Autónoma Baja California (UABC)**, *B.Sc. in Physics*, Ensenada, Baja California, Mexico.
2012–2015 **Preparatoria Federal Lázaro Cárdenas**, *High School with an Electronics specialization*, Tijuana, Baja California, Mexico.

Languages

Spanish	First language	
English	Advanced	TOEFL iBT 101/120 points
French	Basic	Level A2

Interests

Academic Particle physics, Experimental High Energy physics, Nuclear physics, Instrumentation, Quantum optics, Electronics.

Research Experience

Construction and characterization of plastic scintillator particle detectors Summer Research Project at Faculty of Physical and Mathematical Sciences of the Meritorious Autonomous University of Puebla (BUAP) <i>Advisor: Dr. Mario Iván Martínez</i>	π-Pulse Generation in a Hollow Core Photonic Crystal Fiber Filled with Acetylene Research at Science Faculty of the Autonomous University of Baja California (UABC) <i>Advisor: Dr. Manuel Iván Ocegueda Miramontes</i>
Development of an experimental platform with LabVIEW for the study and characterization of different types of sensors in an instrumentation course Thesis at Science Faculty of the Autonomous University of Baja California (UABC): Approved with Honours <i>Advisor: Dr. Eloísa García Canseco</i>	
Study of the combined performance of the Digital Hadronic Calorimeter and Si-W Electromagnetic Calorimeter of the CALICE Collaboration. Research at McGill University: 2021-2023 <i>Advisor: Prof. Francois Corriveau</i>	

Programming abilities

LabVIEW	Intermediate
Root	Intermediate
C++	Intermediate
MATLAB	Intermediate
Python	Basic

Academic service

- Conference talk **CALOR 2024: the 20th International Conference on Calorimetry in Particle Physics**, Tsukuba, Japan, May 20th, 2024, Talk- Test-beam measurements of instrumented sensor planes for a highly compact and granular electromagnetic calorimeter, On behalf of the LUXE ECAL-P Group.
- Master's Thesis **Study of the combined performance of the Digital Hadronic Calorimeter and the Si-W Electromagnetic Calorimeter**, McGill University, Montreal, QC, Canada.
Thesis director: Prof. Francois Corriveau
- Conference talk **CALICE Collaboration Meeting, IJCLab and Laboratoire Leprince-Ringuet (LLR)**, October 12th - 14th, 2022., Orsay and Palaiseau, France, Talk- Study of the combined performance of the Digital Hadronic Calorimeter and the Si-W Electromagnetic Calorimeter.
- Assistantship **Assistantship in Experimental Methods**, McGill University, September 2022- December 2022, Montreal, Canada., Course Instructor: Prof. Brigitte Vachon.
- Conference talk **2022 Canadian-Cuban-American-Mexican Graduate Student Physics Conference**, Online, August 2nd and 3rd, 2022., Talk- Study of the combined performance of the Digital Hadronic Calorimeter and the Si-W Electromagnetic Calorimeter of the CALICE Collaboration.
- Award **1st Place in Student Presentations for the Graduate Instrumentation and Detector School 2022 with Group talk: High purity Germanium detectors**, TRIUMF, June 24th 2022, Vancouver, BC.
- Summer School **Graduate Instrumentation and Detector School 2022**, TRIUMF, June 13th-24th 2022, Vancouver, BC.
- Conference talk **Canadian Association of Physicists Conference**, McMaster University, June 6th - 10th, 2022., Hamilton, ON, Canada, Talk- Study of the combined performance of the Digital Hadronic Calorimeter and the Si-W Electromagnetic Calorimeter of the CALICE Collaboration.
- Assistantship **Assistantship in Signal Processing**, McGill University, January 2022- April 2022, Montreal, Canada., Course Instructor: Prof. Walter Reisner.
- Assistantship **Assistantship in Introductory Physics: Mechanics**, McGill University, September 2021- December 2021, Montreal, Canada., Course Instructor: Prof. Kenneth Ragan.
- Workshop **3rd Summer Particle Astrophysics Workshop (EIEIOO)**, Online, Canada, May 4th-13th 2021.
Organized by the McDonald Institute
- Thesis **Development of an experimental platform with LabVIEW for the study and characterization of different types of sensors in an instrumentation course**, Science Faculty of the Autonomous University of Baja California, Ensenada, Baja California, Mexico.
Thesis director: Dr. Eloisa García Canseco
- Summer School **Terascale Summer School 2020**, Online School on theoretical and experimental particle physics Organised by DESY Hamburg and Zeuthen, July 23rd- August 12th 2020.
- Course **LabVIEW Core 1**, Online Course offered by National Instruments, April 2020.

- Contest and workshop **Winner at the Summer Internships in Experimental High Energy Physics Abroad Contest 2020 for a place in the DESY Summer Student Program 2020 (Stay cancelled due to COVID-19 Pandemic)**, *Faculty of Physical and Mathematical Sciences of the Meritorious Autonomous University of Puebla, January 9th-11th 2020.*, Puebla, Pue.. Organized by the Particles and Fields Division of the Mexican Physical Society
- Workshop **Quantum Field Theory Workshop: Feynman Diagrams** , *Science Faculty of the Autonomous University of Baja California, Ensenada, Baja California, Mexico, September 17th-19th 2019.*
Instructor: Dr. Jonathan Lozano de la Parra
- Research internship project **Construction and characterization of plastic scintillator particle detectors**, *Faculty of Physical and Mathematical Sciences of the Meritorious Autonomous University of Puebla, 2019.*, Puebla, Pue..
Advisor: Dr. Mario Iván Martínez
- Workshop **Quantum Field Theory Workshop: Introduction** , *Science Faculty of the Autonomous University of Baja California, Ensenada, Baja California, Mexico, May 6th-8th 2019.*
Instructor: Dr. Jonathan Lozano de la Parra
- Contest and workshop **Finalist at the Summer Internships in Experimental High Energy Physics Abroad Contest 2019**, *Physics and Mathematics Department of the Ibero-American University, December 13th- 15th, 2018.*, Mexico City, Mexico.
Organized by the Particles and Fields Division of the Mexican Physical Society
- Event **XXXV Science Week**, *Autonomous University of Baja California, October 23rd - 26th, 2018.*, Ensenada, B.C., Project: *Ultrasonic levitator.*
- Research internship project **π -Pulse Generation in a Hollow Core Photonic Crystal Fiber Filled with Acetylene**, *Science Faculty of the Autonomous University of Baja California, 2018.*, Ensenada, B.C..
Advisor: Dr. Manuel Iván Ocegueda Miramontes
- Assistantship **Assistantship in Instrumentation**, *Autonomous University of Baja California, September 9th, 2018 - 2019*, Ensenada, B.C., Advisor: Dr. Eloísa García Canseco.
- Assistantship **Assistantship in Optical Physics**, *Autonomous University of Baja California, September 9th, 2018 - December 2018*, Ensenada, B.C., Advisor: Dr. Manuel Iván Ocegueda Miramontes.
- Professional social service **Collaborator in the Mexican Olympiad of Informatics in Baja California**, *Autonomous University of Baja California, September 9th, 2018 - present*, Ensenada, B.C., Advisor: Dr. Eloísa García Canseco.
- Forum **6th. Forum of Research Results 2018**, *Autonomous University of Baja California, October 9th, 2018.*, Ensenada, B.C., Short talk - Particle physics: the gold atom, the charm and strange quarks and the k-meson.
- Conference **International Conference of the XXIII Scientific and Technological Summer Research of the Pacific**, *Technological University "Bahía de Banderas", August 15th - 18th, 2018.*, Nueva Vallarta, Nayarit, Short talk - Particle physics: the gold atom, the charm and strange quarks and the k-meson.
- Internship **XXIII Scientific and Technological Summer Research of the Pacific**, *Science Faculty of the University of Colima, June 18th - August 3rd, 2018.*, Colima, Colima.
Advisor: Dr. María Elena Tejeda - Yeomans
- Service **Collaborator in Talents in Physics Contest 2018 and the XXXIV Regional Physics Contest**, *Autonomous University of Baja California, April 2018*, Ensenada, B.C., Advisor: Dr. Priscilla Iglesias.
- Event **XXXIV Science Week**, *Autonomous University of Baja California, October , 2017.*, Ensenada, B.C., Project: *Lissajous' figures.*

Newsletters references

- Interview for Gazette UABC "Seleccionan a egresada de Física para realizar una estancia en Alemania".
Reference: <http://www.ens.uabc.mx/noticias/estancia.html>
- Article. Newspaper "El Vigía" – *Visit Expo-Science 2018*.
Reference: <https://www.elvigia.net/general/2018/10/24/visite-expo-ciencia-2018-314928.html>
- Interview for Síntesis – *Science students in Ensenada levitate small objects*.
Reference: <https://sintesistv.com.mx/estudiantes-de-ciencias-en-ensenada-hacen-levitar-objetos-pequenos/>