ANA PAULA VIZCAYA HERNANDEZ

https://anavizcaya.github.io/
Department of Physics ⋄ Carnegie Mellon University ⋄ Pittsburgh, Pennsylvania, USA
avizcaya@andrew.cmu.edu

EDUCATION

Carnegie Mellon University *2016 - Present*
Ph.D. in Physics
Advisor: Diana Parno
Field: Experimental physics, neutrino physics

Carnegie Mellon University *2016 - 2018*
M. Sc. in Physics

Universidad Nacional Autónoma de México *2010 - 2016*
Licenciatura en Físics (B.S. in Physics)
Advisor: Andrés Sandoval Espinosa

University of Groningen *Spring 2014*
Study Abroad Program at the Netherlands

RESEARCH EXPERIENCE

- Member of the KATRIN Collaboration (August 2017 - Present)
  - Characterization, monitor and simulations of background in the experiment created by ions.
  - Data taking and characterization of the plasma created in the KATRIN Source Section
  - Di/re-assembled KATRIN main detector to exchange wafer.
- Member of the TRIMS Collaboration (January 2017 - Present)
  - Detector simulations with SRIM software and data analysis
- Summer research (July 2018) at Max-Planck-Institut fur Physik in Munich working with Dr. Susanne Mertens on fitters analysis for the KATRIN experiment.
- Summer research (Jun, Oct 2018) at Karlsruhe Institute of Technology (KIT) working with Dr. Kathrin Valerius on ion detection and monitoring for the KATRIN experiment.
- Undergraduate research (2014-2016) at Instituto Nacional de Física (UNAM) as part of the High Altitude Water Cherenkov (HAWC) Collaboration, working on data analysis and monitoring the experiment.

PAPERS

Published and accepted papers

1. Beta Decay of Molecular Tritium
   The TRIMS Collaboration, Phys. Rev. Lett. 124, 222502 (2020)
2. First operation of the KATRIN experiment with tritium
   The KATRIN Collaboration, Eur. Phys. J. C 80, 264 (2020)
3. An improved upper limit on the neutrino mass from a direct kinematic method by KATRIN
   The KATRIN Collaboration, Phys. Rev. Lett. 123, 221802 (2019)

4. Suppression of Penning discharges between the KATRIN spectrometers
   The KATRIN Collaboration, Eur. Phys. J. C (2019) pre-print on arxiv: 1911.09633
5. High-resolution spectroscopy of gaseous ^{83m}Kr conversion electrons with the KATRIN experiment
   The KATRIN Collaboration, J.Phys.G 47 (2020) 6, 065002
6. Gamma-induced background in the KATRIN main spectrometer
   The KATRIN Collaboration, Eur. Phys .J. C 79 (2019) 9, 807
7. Muon-induced background in the KATRIN main spectrometer
   The KATRIN Collaboration, Astroparticle Physics, Vol. 108, pp. 40-49 (2019)
8. The KATRIN Superconducting Magnets: Overview and First Performance Results
   The KATRIN Collaboration, Journal for Instrumentation, 13(8), T08005 (2018)
9. Reduction of stored-particle background by a magnetic pulse method at the KATRIN experiment
   The KATRIN Collaboration, Eur. Phys. J. C, 78:778 (2018)
10. Calibration of high voltages at the ppm level by the difference of ^{83m}Kr conversion electron lines at the KATRIN experiment
    The KATRIN Collaboration, Eur. Phys. J. C, 78:368 (2018)
11. First transmission of electrons and ions through the KATRIN beamline
    The KATRIN Collaboration, JINST 13 P04020 (2018)

GRANTS AND AWARDS

Poster finalist at Neutrino 2018	2018
Juan Manuel Lozano Mejía Diploma (Recognition for the excellent work in bachelor thesis)	2016
Becario Internacional (Schoolarship to study abroad for one semester given by UNAM-DGESI)	2014

TALKS AND POSTERS

- *Poster:* Ion monitoring with the KATRIN experiment
  XXIX International Conference on Neutrino Physics (Virtual meeting 2020)
- *Poster:* Ion retention, blocking and monitoring within the KATRIN experiment
  Heraeus Seminar (Bad Honnef, Germany 2019)
- *Talk:* Ion retention, blocking and monitoring within the KATRIN experiment
  APS April Meeting (Denver, USA 2019)
- *Poster:* Detecting light ions and electrons with TRIMS silicon detectors
  XXVIII International Conference on Neutrino Physics and Astrophysics (Germany 2018)
- *Poster:* Tritium ion monitoring during KATRIN First Tritium
  XXVIII International Conference on Neutrino Physics (Heidelberg, Germany 2018)
- *Poster:* Monitoreo del Observatorio HAWC utilizando muones verticales
  Congreso Nacional de Física (México 2015)

TEACHING EXPERIENCE

- *Teaching Assistant:* Experimental Physics and Basic Experimental Physics — 2016 - 2017
  Department of Physics, Carnegie Mellon University. Professor: Barry Luokkala
- *Teaching Assistant:* Física Nuclear y Subnuclear — 2015 - 2016
  Universidad Nacional Autónoma de México. Professor: Hermes León Vargas

SERVICE

2020	Panellist in CUWiP *Underrepresented Minorities Roundtable*
2019	Chair of FGSA APS April meeting session *Publishing in Areas Outside of Peer Reviewed Journals*
2019	Panellist in APS April meeting *A Panel Discussion on Physics Graduate School*
2017,2018	APS *Forum of Graduate Students Affairs* (FGSA) Treasurer.
2018	USA Organizer of *CAM 2018 conference* (Canadian American Mexican graduate student physics conference)
2017-2018	Organizer of *Constructive Interference* meetings for women and minorities in science at Carnegie Mellon University.

LANGUAGES

Spanish (native); **English** (fluent).