CARLOS ALBERTO ARGÜELLES DELGADO

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Postdoctoral research associate at the Massachusetts Institute of Technology (MIT), in Professor Janet Conrad's group. Currently working in the IceCube Neutrino Observatory in the South Pole, as well as in neutrino phenomelogy.

EDUCATION

Ph.D in Physics, University of Wisconsin – Madison
July 2012 – August 2015.

M. Sc. in Physics, Pontificia Universidad Católica del Perú
March 2009 – December 2012.

Ba. Sc. In Physics, Pontificia Universidad Católica del Perú
March 2004 – December 2008.

PROFESSIONAL EXPERIENCE

Massachusetts Institute of Technology (MIT)
September 2015 – on going
Postdoctoral Research Associate
Researcher in J. Conrad group.

University of Wisconsin - Madison
July 2012 – August 2015
Research assistant
Research assistant under the supervision of F. Halzen.

Pontificia Universidad Católica del Perú (PUCP)
March 2010 – December 2012
Research assistant
Research assistant under the supervision of A. Gago in the HEP-PUCP group.

Pontificia Universidad Católica del Perú (PUCP)
August 2007 – December 2011
Teaching assistant

AWARDS & FELLOWSHIPS

Fermilab Theory Group Latin-American Fellow 2011.

Award for academic excellence and a for achieving the firsts places in Science and Engineering in undergraduate studies.

Earned scholarships for outstanding performance in physics to continue his undergraduate and graduate studies in physics at PUCP.

INVITED SEMINARS AND TALKS

- **November 2016:** Seminar at the University of Washington, Seattle,.
- **July 2016:** Brookhaven National Laboratory Seminar.
- **June 2016:** Instituto de Física Corpuscular (IFIC) Seminar.
- **June 2016:** Latin American Webinars on Physics.
- **May 2016:** Yale Wright Lab Seminar.
- **May 2016:** Caltech HEP Seminar.

- **March 2016:** Columbia HEP Seminar.
- **March 2016:** University of Michigan at Ann Arbor HEP Seminar.
- **March 2016:** SLAC Experimental Seminar.
- **February 2016:** NorthWestern University HEP seminar.
- **February 2016:** Ohio State University, CCAPP Seminar.
- **December 2015:** Harvard HEP Seminar.
- **December 2015:** MIT LNS Seminar.
- **November 2015:** Penn. State University HEP Seminar.

SHOOLS, CONFERENCES AND WORKSHOPS

Invited Plenary

- **April 2016:** American Physics Society (APS) April Meeting, Salt Lake City, Utah, US.

Plenary

- **June 2016:** Seventh Meeting on CPT and Lorentz Symmetry, Bloomington, Indiana, US.
- **September 2014:** IceCube Fall Collaboration Meeting, Geneva, Switzerland.

Invited Parallel

- **September 2016:** TeVPa 2016, CERN, Geneva, Switzerland.

Paralllel

- **August 2016:** Internacional Conference of High Energy Physics (ICHEP), Chicago, Illinois, US.
- **April 2016:** IceCube Spring Collaboration Meeting, Long Island/Manhattan, New York, US.
- **September 2015:** Very Large Volume Neutrino Telescope (VLVvT) 2015, Rome, Italy.
- **June 2015:** WIN2015, Heidelberg, Germany.
- **April 2015:** IceCube Spring Collaboration Meeting, Madison, Wisconsin, US.
- **March 2014:** IceCube Spring Collaboration Meeting, Banff, Alberta, Canada.
- **October 2013:** IceCube Fall Collaboration Meeting, Munich, Germany.
- **May 2013:** IceCube Spring Collaboration Meeting, Madison, Wisconsin, US.
- **March 2012:** PASI2012: Exploring the Terascale and Beyond, Buenos Aires, Argentina.

Poster

- **July 2016:** Neutrino2016, London, UK.
- **June 2015:** Invisibles2015, Madrid, Spain.

Other Workshops, Schools, and Conferences

- **January 2016:** Neutrino Detector R&D Facilities Workshop, Fermilab, Batavia, Illinois, US.
- **July 2015:** Crossroads of Neutrino Physics, Mainz, Germany.
- **January 2015:** Hadronic Matrix Elements for Probes of CP Violation, Amherst, Massachusetts, US.
- **October 2014:** NuSTEC 2014 Training Program, Batavia, Illinois, US.
- **July 2014:** Invisible Workshop, Paris, France.
- **July 2014:** Invisible School, Gif-Sur-Yvette, France.
- **June 2014:** NBIA PhD. School: Neutrinos underground and in the heavens, Copenhagen, Denmark.
- **May 2014:** Unlocking the Higgs Portal, Amherst, Massachusetts, US.
- **October 2013:** Schule für Astroteilchenphysik, Erlangen, Germany.
- **July 2013:** Tri-Institute Summer School on Elementary Particles (TRISEP), TRIUMF, Vancourver, BC, Canada.
- **May 2013:** IceCube Particle Astrophysics Symposium, Madison, Wisconsin, US.
- **October 2012:** IceCube Fall Collaboration Meeting, Aachen, Germany.
- **July 2012:** IceCube BootCamp 2012, Vrije Universiteit Brussel, Brussels, Belgium.
- **August 2011:** Supersymmetry 2011 (SUSY11), Fermilab, Chicago, Illinois, US.
- **August 2011:** Standard-Model Extension (SME) Workshop, IU, Bloomington,Indiana, US.
- **May 2011:** Short-Baseline Neutrino Workshop, Fermilab, Chicago, Illinois, US.
- **May 2011:** Phenomenology 2011 Symposium, Madison, Wisconsin, US.
- **March 2011:** CERN – Latin-American School of High-Energy Physics, Natal, Brasil.
- **December 2010:** VIII Simposio Latinoamericano de Física de Altas Energías (VIII Latinamerican Symposium on High Energy Physics), Valparaíso, Chile.
- **Jan-Mar 2009:** Summer School at Instituto de Matemáticas Puras e Aplicadas – IMPA, Rio de Janeiro, Brasil.
- **Jan-Mar 2008:** Summer School at Instituto de Matemáticas Puras e Aplicadas – IMPA, Rio de Janeiro, Brasil.
- **Jul-Aug 2007:** Capacity building workshop on planetary science - COSPAR, Montevideo, Uruguay.

- **Feb 2007:** Décimo Congreso Latinoamericano de Probabilidad y Estadística Matemática (X CLAPEM) – PUCP, Lima, Perú.

PUBLICATIONS

For a full publication list go to:

http://inspirehep.net/search?p=exactauthor%3AC.A.Arguelles.1&sf=earliestdate

SELECTED PEER-REVIEWED PAPERS

First Constraints on the Complete Neutrino Mixing Matrix with a Sterile Neutrino
G.H. Collin (MIT), C.A. Argüelles (MIT), J.M. Conrad (MIT), and M.H. Shaevitz (Columbia)
Accepted to PRL. Submitted to arXiv:1607.00011.

Searches for Sterile Neutrinos with the IceCube Detector
IceCube Collaboration
Published in PRL 117 071801. (arXiv:1605.01990)

Production of keV Sterile Neutrinos in Supernovae: New Constraints and Gamma Ray Observables
C.A. Argüelles (MIT), V. Brdar (Mainz University), and J. Kopp (Mainz University)
Submitted to arXiv:1505.00654. (Submitted to PRL, under review)

Dark Gauge Bosons: LHC Signatures of Non-Abelian Kinetic Mixing
C.A. Argüelles (UW-Madison, MIT), X.-G. He (Shangahai Jiaotong Univ.), G. Ovanesyan (UMass.-Amherst), T. Peng (UW-Madison), and M. Ramsey-Musolf(Mass.-Amherst)
Submitted to arXiv:1604.00044. (Submitted to PLB, under review)

Sterile Neutrino Fits to Short Baseline Data
G.H. Collin (MIT), C.A. Argüelles (MIT), J.M. Conrad (MIT), and M.H. Shaevitz (Columbia)
Published in Nucl. Phys. B908 (2016) 354-365. (arXiv:1607.00011)

New Physics in Astrophysical Neutrino Flavor
C.A. Argüelles (UW-Madison), T. Katori (Queen Mary Univ. of London), and J. Salvado (UW-Madison)
Published in PRL 115 161303 (arXiv:1506.02043).

The High-Energy Behavior of Photon, Neutrino and Proton Cross Sections
C.A. Argüelles (UW-Madison), Francis Halzen (UW-Madison), Logan Wille (UW-Madison), and Mary Hall Reno (U. Iowa)
Published in Phys. Rev. D92 (2015) no.7, 074040. (arXiv:1504.06639).

A Simple Quantum Integro-Differential Solver (SQuIDS)
C.A. Argüelles (UW-Madison), J. Salvado (UW-Madison), and Christopher N. Weaver (UW-Madison)
Published in Computer Physics Communications 196 (2015) 569-591. (arXiv:1412.3832).

Sterile neutrinos and indirect dark matter searches in IceCube
C.A. Argüelles (PUCP-FNAL) and J. Kopp (FNAL).
Published in JCAP 07:016,201. (arXiv:1202.3431)

Searching for cavities of various densities in the Earth's crust with a low-energy electron-antineutrino beta-beam
C.A. Argüelles (PUCP), M. Bustamante (PUCP), and A.M. Gago (PUCP).
Published in Mod. Phys. Lett. A30 (2015) no. 29, 1550148. (arXiv:1201.6080)

The Brightening of Saturns's F Ring
R.S.French, M.R.Showalter, C.A. Argüelles, M.Pajuelo, P.Becerra, M.M.Hodman, and P.D.Nicholson
Published in Icarus, 2012,219, 181-193, doi:10.1016/j.icarus.2012.02.020

IceCube expectations for two high-energy neutrino production models at active galactic nuclei
C.A. Argüelles (PUCP), M. Bustamante (PUCP – FermiLab), and A.M. Gago (PUCP)
Published in JCAP 1012:005,2010. (arXiv:1008.1396)

The Brightening of Saturn's F Ring
M. R. Showalter, S. R. French, R. Sfair, C. A. Argüelles, M. Pajuelo, P. Becerra, M.M. Hedman, and P.D. Nicholson.

American Astronomical Society, DDA meeting #40, #3.04; Bulletin of the American Astronomical Society, Vol. 41, p.896.

SELECTED LIST OF PROCEEDINGS AND OTHER PUBLICATIONS OF INTEREST

Results from the search for eV-sterile neutrinos with IceCube
C.A. Argüelles (MIT) on behalf of the IceCube Collaboration.
Proceedings for Neutrino2016.

Search for Lorentz Violation in km3-Scale Neutrino Telescopes
C.A. Argüelles (MIT), G.H. Collin (MIT), J.M. Conrad (MIT), T. Katori (Queen Mary Univ. of London), and A. Kheirandish (UW-Madison)
Proceedings for the Seventh Meeting on CPT and Lorentz Symmetry (arXiv:1608.02946).

Test of Lorentz Violation with Astrophysical Neutrino Flavor
T. Katori (Queen Mary Univ. of London), C.A. Argüelles (MIT, and J. Salvado (IFIC-Valencia)
Proceedings for the Seventh Meeting on CPT and Lorentz Symmetry (arXiv:1607.08448).

Fundamental Physics at the Intensity Frontier
J.L. Hewett et al.
Submitted to arXiv:1204.5379.

Light Sterile Neutrinos: A White Paper
K.N. Abazajian et al.
Submitted to arXiv:1205.2671.

ADDITIONAL INFORMATION

Languages: Spanish, English (FCE/CAE Cambridge certification & TOEFL).

Boston, November 2016