

Guillermo Palacio | Curriculum Vitae

Cr 59 CII 80 SUR 78 – La estrella – Antioquia

✉ +57 3007669504 • ✉ guillermo.palacio38@eia.edu.co

PhD in Physics, exploring minimal phenomenological models that potentially explains the origin of Dark Matter and provide an explanation for the Neutrino Mixing and Masses. Adjunct professor at Universidad EIA

Employment

- Universidad EIA** Colombia
○ *Adjunct Professor* July 2015–Currently
Responsibilities: Teach physics courses for undergraduate students
- Universidad EAFIT** Colombia
○ *Adjunct Professor* January 2016 – December 2018
Responsibilities: Teach physics courses for undergraduate students.
- Universidad de Antioquia** Colombia
○ *Adjunct Professor* January 2016 – December 2018
Responsibilities: Teach physics courses for undergraduate students.
- Universidad Nacional de Colombia – Sede Medellín** Colombia
○ *Instructor* January 2011 – May 2012
Teach undergraduate physics laboratories.

Education

- **University of Antioquia** Colombia
○ *Ph.D. in High Energy Physics – Phenomenology* 2013–2017
- **Universidad Nacional de Colombia–Sede Medellín** Colombia
○ *M.Sc. in Physics* 2011–2013
- **Universidad Nacional de Colombia–Sede Medellín** Colombia
○ *B.S in Engineering Physics* 2005–2010
- **PhD thesis: Models for dark matter and neutrino masses**
My research is based on the phenomenological study of Minimal models that account for neutrino masses and mixing and provide a viable candidate for the DM in the Universe.
- **Masters Research: Neutrino masses in a Little higgs model with gauge symmetry**
 $SU(3)_C \otimes SU(4)_L \otimes U(1)_X$
We carry out a search for possible mechanisms that potentially explain the smallness of neutrino masses in the context of an anomaly-free Little Higgs model with electroweak gauge symmetry $SU(4)_L \otimes U(1)_X$

Awards

- **PhD studies** *University of Antioquia*
Instructor student from 2013-2015.
- **Master** *National University of Colombia- Medellin Campus*
Outstanding Graduate Student Scholarship

Technical skills

- **Programming Languages:** Proficient in: Python, Mathematica, TeX and root.
- **High Energy Physics packages:** CheckMATE HEP, MadGraph, FeynRules, SARAH, MadDM, micrOMEGAS.

Publications

B. Dutta, **Guillermo Palacio**, J. D. Ruiz-Alvarez, D. Restrepo *Vector Boson Fusion in the Inert Doublet Model*. Phys. Rev. D 97, 055045 – Published 29 March 2018
DOI: <https://doi.org/10.1103/PhysRevD.97.055045>

Guillermo Palacio *Neutrino masses in the $SU(4)_L \otimes U(1)_X$ electroweak extension of the standard model*. Int. J. Mod. Phys. A, 31, 1650142 (2016) [15 pages]
DOI: <http://dx.doi.org/10.1142/S0217751X16501426>

F. V. Palhen, **Guillermo Palacio**, D. Restrepo, O. Zapata *Radiative type III seesaw model and its collider phenomenology*. Phys. Rev. D 94, 033005 – Published 17 August 2016
DOI: <https://doi.org/10.1103/PhysRevD.94.033005>

M. R. Fulla, **Guillermo. Palacio**, D. Lujan, J. H. Marín,. *Electron-Electron Correlation in Vertically Stacked Nanorings*. Revista Colombiana de Física, vol. 44, No. 1, 2012 p82-p86 ISSN:0120-2650

A. Jaramillo, **Guillermo Palacio**, Luis A. Sánchez,. *Fenomenología de Bosones Gauge Neutros en un Modelo Electrodébil con Simetría Gauge $SU(4)_L \otimes U(1)_X$* . Revista Colombiana de Física, vol. 44, No. 1, 2012 p93-p97 ISSN:0120-2650

Conferences

Medellín, Colombia <i>1st Colombian Meeting on High Energy Physics</i>	November 28 - December 2 <i>December 2016</i>
Lyon, France <i>International school of subatomic physics</i>	October 28 -November 2 <i>October 2014</i>
Lyon, France <i>Academic internship</i>	September 11 -December 5 <i>September 2014</i>
Trieste, Italy <i>SUSY Conference 2013</i>	August 26 -31 <i>August 2013</i>
Trieste, Italy <i>School on Supersymmetry and Unification of Fundamental Interactions</i>	August 20 -23 <i>August 2013</i>
Sao Paulo, Brazil <i>School on Particle Physics in the LHC Era</i>	April 1 -12 <i>April 2013</i>
Arequipa, Peru <i>Latin-American School of HEP</i>	March 6 -19 <i>March 2013</i>

Universidad de los Andes, Bogotá, Colombia	January 4 -8
<i>2th school in particle physics - Higgs's boson physics</i>	<i>June 2012</i>
International center for theoretical physics ICTP, Trieste, Italy	January 16 -23
<i>School in strongly couple physics beyond the Standard Model</i>	<i>January 2012</i>
, Bogota, Colombia	October 3 - 7
<i>XXIV Congreso Nacional de Física</i>	<i>October 2011</i>
Universidad de los Andes, Bogota, Colombia	May 23 - 27
<i>Primera escuela de física de partículas: Supersimetría</i>	<i>October 2011</i>
Universidad de cartagena, Santa Marta, Colombia	October 5 - 9
<i>XXIII Congreso Nacional de Física</i>	<i>October 2009</i>

o