Alis Rodríguez Manso

Curriculum Vitae

Education

2011–2015 **Ph.D.**, *National Institute for Subatomic Physics (Nikhef) & Utrecht University, The Netherlands (UUNL)*.
Thesis title: Multiplicity and transverse momentum dependence of the charged dependent correlations studies using Balance Functions in ALICE, at LHC.
Principal Investigator: Panos Christakoglou, assistant professor at UUNL and senior scientist at Nikhef.

2010–2011 **MSc. Nuclear Physics**, *Higher Institute of Technologies and Applied Sciences (InSTEC), Cuba*.
Thesis Title: Thermodynamic properties of matter using the Nanothermodynamic Model of Nuclei.
Principal Investigators: Fernando Guzman Martinez and Oscar Edgar Rodriguez Hoyos, full professors at InSTEC.

2005–2010 **BSc. Nuclear Physics**, *InSTEC, Cuba*, *Summa Cum Laude*.
Thesis Title: Nanothermodynamic Model of Nuclei.
Principal Investigator: Oscar Edgar Rodriguez Hoyos, full professor at InSTEC.

Research Experience

2016-present **Post Doctoral Research Associate**, *Cyclotron Institute, Texas A&M University*.
Principal Investigator: Sherry Yennello, Cyclotron Institute Director, full professor TAMU.

Physics Analysis and Simulations

Developed and executed the "Equilibration chronometry in dynamically deformed two and three body nuclear systems" analysis.

Developed and executed the "Equilibration chronometry comparison to Dynamical Transport Model (Boltzmann-Langevin One Body, BLOB)" analysis.

Detector and Instrumentation

Planned and implemented the experimental campaigns using PIXE and PIGE for elemental composition, concentrations, and contamination at the Cyclotron Institute. Analyzed the produced data.

Organized and revamped the upgrade of the resolution performance of the TAMU BaF_2 array for gamma-ray experiments.

Coordinated and executed the experimental portion of the Terbium isotope production campaign.

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Leadership and Service

Undergraduate Research coSupervisor of projects: "PIXE and PIGE pilot experiments at TAMU" and "Working with BaF_2 array for gamma-ray experiments".

Research Experience for Undergrads (REU summer 2017 & 2018) coSupervisor of projects: "Are copper pennies really made from copper?", "PIXE experiment: determining concentration of samples", "Using PIXE and PIGE for Elemental Composition Analysis" and "Production of ^{149}Terbium for medical diagnostics and treatment".

2011–2015 **Graduate Researcher**, *National Institute for Subatomic Physics (Nikhef) & Utrecht University*.

Physics Analysis and Simulations

Multiplicity and transverse momentum dependence of the charged dependent correlations studies using Balance Functions in ALICE.

Balance Functions comparison with models: PYTHIA8, DPMJET, HIJING and AMPT.

Leadership and Service

Operator of data running (a.k.a Train Operator), collaborating in data running process for the pp data in ALICE, at LHC.

Operator (a.k.a Shift Leader) in data taking, collaborating in the data taking process for the p–Pb data in ALICE, at LHC.

2009–2011 **Master and Undergraduate researcher**, *Higher Institute of Technologies and Applied Sciences (InSTEC), Cuba*.

Physics Analysis and Simulations

Thermodynamic properties of matter using the Nanothermodynamic Model of Nuclei.

Major contributions in experimental campaigns

2018 Nov **PIGE and PIXE upgrade**.
Measurement of contamination by fluorinated compounds in soils, landscapes and beauty products; and elemental composition analysis for heavy metals.

2018 Jul **^{149}Terbium isotope production experiment**.
Cross section determination for ^{141}Pr(^{14}N, 6n)^{149}Dy decaying to ^{149}Tb.

2018 Feb **PIGE pilot run**.
Measurement of contamination by fluorinated compounds in fast food wrappers.

2017 Jul **PIXE pilot run**.
Measurement to perform elemental composition and concentration analysis in salt samples.

2016 Aug **Graduate thesis experiment of A. Zarrella**.
Pionic fusion: the partial truncated icosahedron phoswich array for detection of low energy charged pions and light charged particles.

Teaching Experience

Jan-March 2016 **Invited Instructor Professor**, *at InSTEC*, La Habana, Cuba.
Master Course: Microscopic Theory of the Nucleus.

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2012–2013 **Teaching Assistant**, *at Utrecht University*, The Netherlands.
Courses: Subatomic Physics & Advance Statistical Physics.

Jul 2013 **Bachelor Thesis coSupervisor**, *at InSTEC*, La Habana, Cuba.
Obtaining the Density Parameter of the Nuclear Levels using the Nanothermodynamic Model of Nuclei.

2012–2013 **Instructor Professor**, *at InSTEC*, La Habana, Cuba.
Categorization obtained at InSTEC.

2009–2011 **Teaching Assistant**, *at InSTEC*, La Habana, Cuba.
Laboratories: Experimental Methods of Nuclear Physics & Neutrons.
Lectures: Nuclear Physics.

Selected Contributions in Conferences, Workshops and Seminars

April 2019 **WorkShop on Nuclear Physics (WONP XVII)**, La Habana, Cuba.
Oral Presentation "NZ equilibration in binary and ternary decays of excited projectile-like fragments (^{70}Zn+ ^{70}Zn at 35 MeV/nucleon)."

Feb 2019 **San Diego State University Seminar**, San Diego, California, USA.
Invited Seminar "Neutron-proton equilibration in heavy-ion dynamically deformed nuclear systems and Particle Induced Gamma-ray and X-ray Emission experiments for contamination and elemental composition studies."

Oct 2018 **Division of Nuclear Physics of the American Physical Society Conference**, Waikoloa, Hawaii, USA.
Oral Presentation "Equilibration chronometry in two and three bodies dynamically deformed nuclear systems."

Aug 2018 **Conference on Application of Accelerators in Research and Industry**, Grapevine, Texas, USA.
Invited Presentation "Implementing PIXE and PIGE at the Texas A&M University Cyclotron Institute."

May 2018 **Multi facets of Eos and Clustering IWM-EC**, Catania, Italy.
Oral Presentation "Equilibration Chronometry and Reaction Dynamics."

Jun 2017 **Gordon Research Conference 2017**, New London, New Hampshire, USA.
Poster "Neutron-proton equilibration chronometry in dynamically deformed nuclear systems."

May 2017 **ARIS 2017**, Keystone, Colorado, USA.
Poster "Neutron-Proton equilibration chronometry in dynamically deformed nuclear systems."

Apr 2017 **American Physics Society 2017**, Washington, DC, USA.
Oral Presentation "Neutron-Proton equilibration in dynamically deformed nuclear systems."

Nov 2016 **CUSTIPEN Mini-Workshop**, Commerce, Tx, USA.
Oral Presentation "Characterizing NZ equilibration in nuclear reactions with subzeptosecond resolution."

Sep 2015 **Quark Matter 2015 International Conference**, Kobe, Fashion Mart, Japan.
Oral Presentation "Multiplicity and transverse momentum dependence of electric charge balance functions."

Aug 2015 **Seminar at Max-Planck-Institut fur Kernphysik**, Heidelberg, Germany.
Seminar "Balance Functions: Multiplicity and transverse momentum evolution of the charge dependent correlations in ALICE."

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Apr 2015 **Seminar for a broad audience, MESA+ and Twente University**, The Netherlands.
Seminar "Charge dependent correlations using balance functions in ALICE and Nanothermodynamic model of nuclei (NMN)."

Dec 2014 **Winter School on Heavy Ion Physics, Zimanyi 2014**, *at KFKI*, Budapest, Hungary.
Oral Presentation "Multiplicity dependence of charge dependent correlations in pp, p-Pb and Pb-Pb collisions at LHC."

Nov 2013 **IX Workshop on Particle Correlations and Femtoscopy**, Acireale-Catania, Italy.
Oral Presentation "Charge dependent correlations in p–Pb at $\sqrt(s_{NN}) = 5.02$ TeV and Pb–Pb at $\sqrt(s_{NN}) = 2.76$ TeV."

Nov 2013 **Annual NNV meeting in Lunteren**, The Netherlands.
Oral Presentation "Charge dependent correlations in p–Pb and Pb–Pb."

Aug 2013 **20th Euroschool on Exotic Beams**, *at JINLR*.
Poster "A nanothermodynamic approach to exotic nuclei."

May 2013 **ALICE Physics Week**, Padova, Italy.
Oral Presentation "Charge dependent correlations at LHC."

Aug 2012 **Quark Matter 2012 International Conference**, Washington DC, USA.
Poster "Balance function studies for non–identified particles in Pb–Pb collisions at $\sqrt(s_{NN}) = 2.76$ TeV."

Apr 2012 **ALICE Physics Week**, Frascati, Italy.
Oral Presentation "Balance Function studies in Pb–Pb collisions in non–identified particles at $\sqrt(s_{NN}) = 2.76$ TeV."

Mar 2012 **Junior´s Day in ALICE week**, *at CERN*, Geneva-CERN, Switzerland.
Oral Presentation "Balance Function studies in Pb–Pb collisions at 2.76 TeV."

Jul 2011 **II Climatic Change Congress**, *Palacio de las Convenciones*, La Habana, Cuba.
Poster "Formas nuevas de la materia nuclear en la naturaleza: Modelo Nanotermodinámico."

Mar 2011 **10th Congress of Cuban Physics Society**, La Habana, Cuba.
Poster "¿Cuán rápidos son los sentidos?"
http://www.fisica.uh.cu/biblioteca/revcubfi/2011/Vol.28-No.1E/index.htm ISSN02539268

Feb 2011 **XIII WONP & VII NURT**, La Habana, Cuba.
Poster "Nanothermodynamic properties of clustered nuclear matter"
Poster "Phase transitions in exotic conditions of stability."

Physics schools

March 2016 **Physics and Applications of High Brightness Beams Workshop**, UCLA-InSTEC, La Habana, Cuba.

Dec 2014 **Winter School on Heavy Ion Physics Zimanyi 2014**, Wigner Research Center for Physics of the Hungarian Academy of Science, KFKI, Budapest.

Aug 2013 **Belgian Dutch German summer school (BND 2013)**, Université Libre de Bruxelles, Belgium.

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2011-2013 **Topical Lectures: Research School of Subatomic Physics in Dark Matter, Accelerators, Higgs Physics, Nuclear Physics, Cosmic Rays and Statistics**, *Conveners: Paul de Jong, Frank Linde, Stan Bentvelsen, Eric Laenen, Etienne Parizot and Glen Cowan*, Nikhef, The Netherlands.

Sep 2012 **Belgian Dutch German summer school (BND 2012)**, Bonn University, Germany.

Mar 2011 **XII Symposia de la Sociedad Cubana de Física**, La Habana, Cuba.

Feb 2011 **Pre-Conference School of the XIII WONP & VII NURT**, La Habana, Cuba.

Jun 2009 **CERN Summer School on High Energy and Particle Physics**, Geneva-CERN, Switzerland.

Feb 2009 **Pre-Conference School of the XII WONP & VI NURT**, La Habana, Cuba.

Jul 2007 **International School on Mathematical and Theoretical Crystallography**, La Habana, Cuba.

Awards

2018 **College of Science Diversity and Equity Small Grants Program**, *TAMU*, USA.

2010 **1st prize of the Theoretical Physics Commission**, *at Student Scientific Forum InSTEC*, La Habana, Cuba.
Nanothermodynamic Model of the mesoscopic matter

2009 **2nd prize of the Theoretical Physics Commission**, *at Student Scientific Forum InSTEC*, La Habana, Cuba.
Polymerization of nuclear matter

2006 **Ab-Initium prize for young scientist**, *at Student Scientific Forum InSTEC*, La Habana, Cuba.
Measurement of the subcritical ensemble´s pellets from InSTEC by low-background gamma spectroscopy

Extra Curricular Activities

2018 **Cyclotron Women's Meetings organizer**, *Cyclotron Institute, TAMU*, USA.
Promoting Diversity, Equity and Inclusion

Aug 2017 **Participant of COACHing Powerful Postdocs Workshop**, *Washington DC*, USA.
Career Launch and Acceleration for Postdoctoral Associates Workshop from American Chemistry Society (ACS)

2016 **Participant of ADVANCE Roadmap Workshop**, *Advance Center for Women Faculty, TAMU*, College Station, USA.
Promoting the Success of Women Faculty through a Psychologically Healthy Workplace

2014–2015 **PhD council member**, *Nikhef*, The Netherlands.

2011 **Work on "How fast are the senses?"**.
Doing measurements and data processing for educative purposes.
(Published at http://www.fisica.uh.cu/biblioteca/revcubfi/2011/Vol.28 No.1E/index.htm Revista Cubana de Física, p126 Vol. 28 No. 1E 2011 ISSN02539268)

Languages

Spanish **Mother tongue**

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English	**Fluent**	
Portuguese	**Fluent**	
Italian	**Intermediate**	
French	**Basic, DELF A2 level**	*Diploma obtained in the French Alliance, Cuba 2011*
Dutch	**Beginners level**	*Diploma obtained from UVA Talen, Amsterdam University, The Netherlands, 2012*

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