CURRICULUM VITAE

1. PERSONAL DATA

1.1. Surnames, names: Pérez Fuentes, Laura Milena

1.2. Citizenship: Colombian

1.3. Passport Number: AR210515.

1.4. Birthplace: Santiago de Cali, Valle del Cauca, Colombia.

1.5. Marital status: Married, one child.

1.6. Academic Address: School of Physical Sciences and Nanotechnology, Yachay Tech University, Hacienda San José s/n y Proyecto Yachay, San Miguel de Urcuquí, Ecuador.

1.7. Telephone: (+56) 582230334.

1.8. Email Account: lperez@yachaytech.edu.ec

1.9. Personal email account: fuentes.lauraperez@gmail.com

2. ACADEMIC BACKGROUND

2.1 Degrees

2016: PhD in Complex Systems, Universidad de Navarra, Pamplona, Spain.

2003: Physicist [Highest honors], Universidad del Valle, Santiago de Cali, Colombia.

2.2 Academic Positions

- July 2016 – January 2017: Postdoctoral Researcher, Universidad de Tarapacá. Arica, Chile (Funding by UTA fellowship).
- January 2017 – December 2017: Part time Researcher, Funding by Grant CORFO 16BPE2 – 66227, Chile.
- **Since December 2017:** Lecturer, School of Physical Sciences and Nanotechnology, Yachay Tech University, Urcuquí, Ecuador.

2.3 Research Lines

1. Nonlinear Physics.
2. Classical Magnetism.
3. Fluid Physics.

2.4 International Publications [13]

L. M. Pérez, J. Bragard, H. L. Mancini, P. Díaz, D. Laroze, H. Pleiner, *Viscosity effect on thermal convection thresholds in a Oldroyd magnetic fluid*. Journal of Magnetism and Magnetic Materials **444**, 432 (2017). http://dx.doi.org/10.1016/j.jmmm.2017.07.052

D. Urzagasti, D. Becerra-Alonso, **L. M. Pérez**, H. L. Mancini, D. Laroze, *Hyper-Chaotic and chaotic synchronisation of two interacting dipoles*. Springer Proceedings in Physics **173** 261 (2016). http://dx.doi.org/10.1007/978-3-319-24871-4_20

D. Urzagasti, D. Becerra-Alonso, **L. M. Pérez**, H. L. Mancini, D. Laroze, "*Hyper-chaotic magnetisation dynamics of two interacting dipoles*". Journal of Low Temperature Physics **181**, 211 (2015). http://dx.doi.org/10.1007/s10909-015-1338-2

L. M. Pérez, J. Bragard, H. L. Mancini, J. A. C. Gallas, A. M. Cabanas, O. J. Suarez, D. Laroze, "*Anisotropy effects on magnetization dynamics*". Networks and Heterogeneous Media **10**, 209 (2015). http://dx.doi.org/10.3934/nhm.2015.10.209

L. M. Pérez, D. Laroze, P. Diaz, J. Martinez-Mardones, H. L. Mancini, *"Rotating convection in a viscoelastic magnetic fluid"*. Journal of Magnetism and Magnetic Materials **364**, 98 (2014). http://dx.doi.org/10.1016/j.jmmm.2014.04.027

L. M Pérez, O. J. Suarez, D. Laroze, H. L. Mancini; "*Classical spin dynamics of anisotropic Heisenberg dimers"*, Central European Journal of Physics **11**, 1629 (2013). http://dx.doi.org/ 10.2478/s11534-013-0280-7

O. J. Suarez, **L. M. Pérez**, D. Laroze, D. Altbir, "*Magnetostatic interactions in cylindrical nanostructures with non-uniform magnetization*", Journal of Magnetism and Magnetic Materials **324**, 1608 (2012). http://dx.doi.org/10.1016/j.jmmm.2011.12.032

L. M. Pérez, J. Bragard, D. Laroze, J. Martinez-Mardones, H. Pleiner; "*Thermal convection thresholds in a Oldroyd magnetic fluid"*, Journal of Magnetism and Magnetic Materials **323**, 691 (2011). http://dx.doi.org/10.1016/j.jmmm.2010.10.022

D. Laroze, **L. M. Pérez**, J. Bragard, E. G. Cordaro, J. Martinez-Mardones; "*Amplitude equation for stationary convection in a viscoelastic ferrofluid*". Magnetohydrodynamics **47**, 159 (2011). http://www.mhd.sal.lv/contents/2011/2/MG.47.2.7.R.html

D. Laroze, J. Martinez-Mardones, **L. M. Pérez**, R. G. Rojas; "*Stationary thermal convection in a viscoelastic ferrofluid*". Journal of Magnetism and Magnetic Materials **322**, 3576 (2010). http://dx.doi.org/10.1016/j.jmmm.2010.07.010

D. Laroze, J. Martinez-Mardones, **L. M. Pérez** "*Amplitude equation for stationary convection in a viscoelastic ferrofluid*". International Journal of Bifurcation and Chaos **20**, 235 (2010). http://dx.doi.org/10.1142/S0218127410025673

D. Laroze, J. Martinez-Mardones, **L. M. Pérez**, Y. Rameshwar; *"Amplitude equation for stationary convection in a rotating binary ferrofluid"*. International Journal of Bifurcation and Chaos **19**, 2755 (2009).
http://dx.doi.org/10.1142/S0218127409024463

D. Laroze, **L. M. Perez**; "*Classical spin dynamics of four interacting magnetic particles on a ring*". Physica B **403**, 473 (2008).
http://dx.doi.org/10.1016/j.physb.2007.08.078

- ***Information of the ISI web of Knowledge***: 61 citations and h-index 5.

2.5 Thesis [3]

1. **L. M. Pérez**, "*Study on the thermal and the electrical properties of KH_2PO_4*" Bachelor Thesis, Universidad del Valle, Colombia. 2003. (This thesis is in Spanish language).
2. **L. M. Pérez**, "*Dynamics of a magnetic dimer*" Master Thesis, Universidad de Navarra, Spain. 2014. (This thesis is in Spanish language and it is called "*Tesina*")
   http://dadun.unav.edu/handle/10171/36978
3. **L. M. Pérez**, "*Hyper-chaotic and chaotic dynamics of magnetic systems*" Ph.D. Thesis, Universidad de Navarra, Spain 2016.
   http://hdl.handle.net/10171/42923

2.6 Internationals Proceedings Publications [3]

1. **L. Pérez**, M. E. Fernandez, J. E. Diosa, R. A. Vargas. *"Effect of Dispersed Al_2O_3 on the Phase Transitions and Ionic Conductivity of KH_2PO_4".* Revista Colombiana de Física **37**, 1 (2005).
2. D. Laroze, J. Martinez-Mardones, **L. M. Pérez**, H. Pleiner *"Stationary thermal convection in viscoelastic ferrofluiud",* Proceedings of the IX International Thermo-diffusion Meeting.
3. D. Laroze, **L. M. Pérez**, J. Bragard, J. Martinez-Mardones, E. G. Cordaro, H. Pleiner, "*Thermal convection thresholds in an viscoelastic ferrofluid*". International Conference on Fluid Dynamics and its Application Prooceding Book. (2011).

2.7 Presentations at Conferences and Workshops [24]

1. **L. M. Pérez**, A. M. Cabanas, D. Laroze, "*Spin torque oscillator under a quasiperiodic current*", MEDYFINOL 2016, Valdivia, Chile (December 2016).
2. L. M. Pérez, D. Laroze, P. Díaz, **J. Martinez-Mardones**, H. L. Mancini, "*Rotating convection in a viscoelastic magnetic fluid*", 14th Latin American Workshop on Nonlinear Phenomena, Cartagena, Colombia (September 2015).

3. **D. Laroze**, D. Urzagasti, D. Becerra-Alonso, L. M. Pérez, H. L. Mancini, "*Hyper-chaotic magnetization dynamics of two interacting dipoles*", 5th Chile-Mexico workshop, Arica, Chile (September 2015).
4. **O. J. Suarez**, L. M. Pérez, D. Cortes-Ortuño, D. Laroze, H. Mancini, "*Classical spin dynamics of two magnetic particles with a modified dipolar interaction*", Net-Works 2013, El Escorial, Spain, December (2013).
5. O. J. Suarez, L. M. Pérez, D. Cortes-Ortuño, D. Laroze, **H. L. Mancini**, "*Classical spin dynamics of two magnetic particles with a modified dipolar interaction*", MEDYFINOL 2012, Santiago, Chile (December 2012).
6. L. M. Pérez, D. Laroze, **J. Martinez-Mardones**, H. L. Mancini, "*Rotating convection in a Oldroyd magnetic fluid*", MEDYFINOL 2012, Santiago, Chile (December 2012).
7. L. M. Pérez, J. Bragard, D. Laroze, J. Martinez-Mardones, **H. Pleiner**, "*Convective Instabilities in a Ferrofluid with a Viscoelastic Carrier Fluid"*, 20th Nordic Rheology Conference, Helsinki, Finland (June 2011).
8. L. M. Pérez, J. Bragard, D. Laroze, J. Martinez-Mardones, **H. Pleiner**, "*Convective Instabilities in a Ferrofluid with a Viscoelastic Carrier Fluid"*, 63rd Annual European Rheology Conference, Suzdal, Russia (May 2011).
9. **D. Laroze,** J. Bragard, L. M. Perez, J. Martinez-Mardones, H. Pleiner, "*Thermal Convection in Viscoelastic Magnetic Fluids*", Patterns in Soft Magnetic Matter, Dresden, Germany (March 2011).

10. M. G. Clerc, **D. Laroze**, J. Martinez-Mardones, L. M. Pérez, H. Pleiner, "*A simple approach to localized convection*", 15th Fall Seminar on Nonlinear Dynamics, Bayreuth, Germany (October 2010).
11. **D. Laroze**, J. Martinez-Mardones, L. M. Pérez, H. Pleiner *"Stationary thermal convection in viscoelastic ferrofluiud",* 9th International Meeting on Thermodiffusion, Toulouse, France (June 2010).
12. **H. Pleiner**, M.G. Clerc, J. Martinez-Mardones, L. M. Pérez, D. Laroze, "*A simple approach to localized convection"*, APS March Meeting 2011, Texas, USA. (March 2011)
13. **H. Pleiner**, J. Martinez-Mardones, L. M. Pérez, D. Laroze, "*Convective Instabilities in a Ferrofluid with a Viscoelastic Carrier Fluid"*, 63rd Annual DFD Meeting of the APS, Long Beach, USA. (November 2010).
14. D. Laroze, J. Martinez-Mardones, L. M. Pérez, **H. Pleiner**, "*Thermal convection in viscoelastic ferrofluiud*", 10th German Ferrofluid Workshop, Benediktbeuern, Germany (September 2010).
15. P. Diaz, **D. Laroze**, L. M. Pérez, H. Pleiner, "*Configurational temperature of a dipolar magnetic chain*", International Conference on Nanoscale Magnetism 2010, Istambul, Turkey (September, 2010).
16. D. Laroze, **J. Martinez-Mardones**, L. M. Pérez, *"Amplitude equation for stationary convection in a binary viscoelastic magnetic fluid",* Instabilities and Nonequilibrium Structures XII, Viña del Mar, Chile (December, 2009).

17. **O. Suarez**, L. M. Pérez, D. Laroze, "*Dynamical behavior of two interacting magnetic particles with modify dipolar interaction*". Solidos09, Valparaiso, Chile (November, 2009).
18. P. Diaz, D. Laroze, **L. M. Pérez**, *"Configurational temperature for a dipolar magnetic chain"*. MEDYFINOL08, Punta del Este, Uruguay. (December, 2008).
19. D. Laroze, **J. Martinez-Mardones**, L. M. Pérez and Y. Rameshwar *"Amplitude equation for stationary convection in a rotating binary ferrofluid"*. SOCHIFI08, Valparaiso, Chile (November, 2008).
20. P. Diaz, D. Laroze, **L. M. Pérez**, "*Classical spin dynamics of four in interacting magnetic particles on a square*" Instabilities and Nonequilibrium Structures XI, Viña del Mar, Chile (December, 2007).
21. **D. Laroze**, L. M. Pérez "*Dynamical behavior of four interacting magnetic nanoparticles on a ring*", HMM07, Naples, Italy (June, 2007).
22. D. Laroze, **L.M. Pérez**, P. Diaz, "*Classical spin dynamics of four in interacting magnetic particles on a square*" LAWNP07, Arica, Chile (October, 2007).
23. **L. M. Pérez**, D. Laroze, P. Vargas, D. Altbir, M. Vazquez, "Magnetic properties of Ni nanowires". Congreso de Metalurgia y Materiales, Santiago, Chile (November, 2006).
24. L. Pérez, M.E. Fernandez, **J.E. Diosa**, R. A. Vargas. *"Effect of Dispersed Al_2O_3 on the Phase Transitions and Ionic Conductivity of KH_2PO_4".* Reunion de la Sociedad Colombiana de Física. (2005).

3. PROFESSIONALS ACTIVITIES

3.1 Teacher

1. Electricity, Magnetism and Waves (Common Course of Engineering Degrees, 2018, Yachay Tech University, Ecuador)
2. Introduction to Engineering (Common Course of Engineering Degrees, 2018, Yachay Tech University, Ecuador)
3. Research Seminar (Bachelor level, 2018, Yachay Tech University, Ecuador).

3.2 Assistant Teacher

4. General Physics: Mechanics. (Bachelor Level, 2000-2002, Universidad del Valle)

3.3 School Teacher

1. Tenth Grade: Physics
2. Tenth Grade: Mathematics.
3. Eleventh Grade: Physics.
4. Eleventh Grade: Mathematics.

3.4 Research Visiting Stays

1. **2008 – 2010**: Instituto de Alta Investigación, Universidad de Tarapacá. Through the Chilean ANILLO-CONICYT ACT 24, Chile.
2. **2011 – 2012**: Max-Planck Institute for Polymer Research, Mainz, Germany. Theory Group under the supervision of Prof. Dr. Harald Pleiner. (with a formal Honorary Contract).

3.4 Research Assistant

1. **2006 – 2008**: Young researcher. Project ANILLO-CONICYT ACT 24, Chile.

3.5 Connection with community

- **2017:** Program "*Experiments of Science in Elementary Schools*" for schools in the First Grade at Arica, Chile.

  Description: Each academic semester we have performed simple experiments concerning general science in the first grade of Elementary Schools. The main idea is the children interact with science, in fact most of the demonstrations were making by themselves. The frequency has been one experiment per week in two parallel levels of the first grade at the school called "*Escuela Básica Jorge Alessandri*" (public system). In addition, we have developed a method to teach programing at the same grade. This was the focus of the second semester 2017.

3.5 Formal Language Courses

1. English: Course at Universidad de Santiago de Chile, Chile. Three Semesters. Basic and Intermediate Level (A1 – B2).
2. German: Course at VHS-Wiesbaden, Germany. Intensive courses, Basic and Intermediate Level (A1 – B1).
3. German: Course at VHS-Mainz, Germany. Intermediate Level (B1 – B2).
4. German Certificate ZD telc Deutsch B1.

4. AWARDS

1. Best Bachelor in Physics, Generation 2003, Universidad del Valle.

5. REFERENCES

1. **Prof. Dr. Hector Mancini**, Universidad de Navarra (Spain).

   Email Account: hmancini@unav.es

   Academic Relationship: Doctoral Advisor.

2. **Prof. Dr. Ruben Vargas**, Universidad del Valle (Colombia).

   Email Account: ruben.vargas@corrreounivalle.edu.co

   Academic Relationship: Bachelor Advisor.

3. **Prof. Dr. Harald Pleiner**, Max Planck Institute for Polymer Research, Germany.

   Email Account: pleiner@mpip-mainz.mpg.de

   Academic Relationship: Advisor of the *research stay* at MPI-P.