

Curriculum Vitae

Dr. José Luis Herrera Diestra

Personal Information:

Nationality: Venezuelan

Date of Birth: 11/15/1977

Address: Cubiculo 10, Departamento de Calculo, Escuela Basica, Facultad de Ingenieria, Universidad de Los Andes. La Hechicera. Merida – Venezuela.

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Education:

- Postdoctoral fellowship
University of Texas at Austin
Supervisor: Dr. Lauren Meyers.
From Dec. 2012 – Dec. 2013.
- Doctor in Fundamental Physics, 2012.
Universidad de Los Andes. Merida, Venezuela.
Thesis: “Models of social dynamics on coevolving networks”.
Supervisor: Dr. Mario Cosenza.
- Magister Scientiae in Fundamental Physics, 2007.
Universidad de Los Andes. Merida, Venezuela.
Thesis: “A model of stratified economic exchange with local interactions”.
Supervisor: Dr. Mario Cosenza.
- Licenciado in Physics, 2005.
Universidad de Los Andes. Merida, Venezuela.
Thesis: “A model of the influence of the neighborhood in social small world networks”
Supervisor: Dr. Mario Cosenza.

Scholarships and awards:

- Award for best regional investigation group “Grupo de Caos y Sistemas Complejos”.
FUNDACITE.
Merida – Venezuela. December 2014.
- Distinction “Rafael Chuecos Poggioli” for researches under 40 years old with outstanding record.
Universidad de Los Andes.
Merida – Venezuela, 2013.

- Research Award.Council for Research.
Universidad de Los Andes.
Merida – Venezuela, 2007 – 2011.
- Scholarship “Misión Ciencia” for doctoral studies.
Ministry of Science and Technology.
Venezuela. From 2009.
- Active member in the National Researchers Program.
Ministry of Science and Technology.
Venezuela. From 2008.

Languages:

- Spanish, English.

Invited speaker:

- “Model of economic exchange in a stratified society with local Interactions”.
III Jornadas Andinas de Dinámica No Lineal.
Lima, Peru 2007.
- “The new science of networks”.
International Year of Physics.
Universidad Nacional Experimental del Táchira.
San Cristobal, Venezuela 2005.
- “The effect of local broadcasting in social networks”.
International Year of Physics.
Universidad Nacional Experimental del Táchira.
San Cristobal, Venezuela 2005.

School attendances:

- Summer School of Statistical Physics of Complex and Small Systems.
IFISC, Palma de Mallorca, Spain, 2011.
Duration: 2 weeks.
- School on Complex networks and applications to neuroscience.
ICTP-SAIR, Sao Paulo, Brazil, 2015.
Duration: 3 weeks.

Oral presentations in conferences:

- “General coevolution of topology and dynamics in networks”.
Summer School of Statistical Physics of Complex and Small Systems.
IFISC, Palma de Mallorca, Spain 2011.
- “Stratified economic exchange in networks”.
Jornadas de Modelado y Simulación.
Mérida, Venezuela 2011.

Poster presentations in conferences:

- “Disease surveillance on complex social networks”.
MIDAS meeting.
Austin – Texas, USA. May 2013.
- “Models of social and economic interactions in coevolving networks”.
VI Interdisciplinary School and Workshop on Complex Systems.
Margarita Island, Venezuela 2008.
- “Dynamical model of the influence of the neighborhood in Small World Networks”.
V Interdisciplinary School and Workshop on Complex Systems.
Margarita Island, Venezuela 2005.
- “Pattern Formation in a model of social networks”
IV Jornadas de Estudiantes de Física.
Universidad Simón Bolívar, Caracas, Venezuela 2004.

Academic positions:

- Group Coordinator
Group of Multidisciplinary Mathematics.
Engineering department.
Universidad de Los Andes. Merida – Venezuela.
From January 2014 to present.
- Assistant Professor
Engineering department.
Universidad de los Andes. Mérida – Venezuela.
From January 2010 to present.
- Tenure track.
Engineering department
Universidad de Los Andes. Merida – Venezuela.
From January 2008 to January 2010.

Courses:

- Calculus 10 and 20 (Differential and integral calculus of one-variable functions).
- Calculus 30 (Differential and integral calculus of multi-variable functions).

Research Projects (finished):

- *“Stratified economic exchange model in dynamical networks”*.
Council for Research, Universidad de Los Andes.
Individual Project.
- *“Analysis and characterization of the social network of the students in the Engineering Department at Universidad de Los Andes”*.
Council for Research, Universidad de Los Andes.
Individual Project.
- *“Interdisciplinary applications of complex networks”*.
Council for Research, Universidad de Los Andes.
Group Project (Coordinator).

Publications:

1. *Local versus global interactions in nonequilibrium transitions: A model of social dynamics*.
J.C. González-Avella, V.M. Eguíluz, M.G. Cosenza, K. Klemm, **J.L. Herrera** and M. San Miguel.
Physical Review E 73, 046119 (2006).
2. *Economic exchange in a stratified society with local interactions*.
J. L. Herrera, M. G. Cosenza, K. Tucci.
Revista Científica UNET 21, 8 (2009).
3. *Stratified economic exchange on networks*.
J. L. Herrera, M. G. Cosenza, K. Tucci.
Physica A 390, 1453 (2011).
4. *General coevolution of topology and dynamics in networks*.
J. L. Herrera, M. G. Cosenza, K. Tucci, J. C. González-Avella.
European Physics Letters 95, 58006 (2011).
5. *Influence of the local versus global interactions in a model of economic exchange*.
J. L. Herrera, M. Escalona-Morán, R. Parra, C. Parra, M. G. Cosenza.

Revista Ciencia e Ingeniería. Special Edition: “Jornada de Modelado y Simulación” pp. 95-100 , Universidad de Los Andes (2011).

6. *Model of infectious diseases on a social dynamical network (In spanish: Modelado de enfermedades contagiosas mediante una clase de redes sociales dinamicas).*
J. L. Herrera, Gilberto González-Parra.
Revista de la Facultad de Ingeniería – UCV 27.2 (2013). 15-20.
7. *Emergence and persistence of communities in coevolutionary networks.*
J. C. González-Avella, M. G. Cosenza, **J. L. Herrera**, K. Tucci.
European Physics Letters 107, 28002 (2014).
8. *Characterization and analysis of the social network of students of the Engineering Department at Universidad de Los Andes, Merida – Venezuela (In spanish: Caracterización y análisis de la red de interacción de los estudiantes de la Facultad de Ingeniería en la Universidad de Los Andes, Mérida – Venezuela)*
Idaí Guíérrez., **J.L. Herrera**.
Revista Ciencia e Ingeniería, 36(3), Universidad de Los Andes (2015)
9. *Disease surveillance on complex social networks.*
J. L. Herrera, Ravi Srinivasan, John S. Brownstein, Alison Galvani, Lauren Ancel Meyers.
Submitted (August 2015).

Thesis Supervised:

- “*Characterization and analysis of the social network of students of the Engineering*”
Engineering department, Universidad de Los Andes.
Student: Idaí Gutiérrez. 2012.
- “*Propagation of epidemic diseases on the social network in the School of Engineering at Universidad de Los Andes*”
Engineering department, Universidad de Los Andes.
Student: Francys Ramirez (Estimate finish time: September 2015)
- “*Targeted vaccination strategies in a students temporal network*”
Engineering department, Universidad de Los Andes.
Student: Eleazar Dugarte (Estimate finish time: September 2015)

Research in progress:

- Study of the effects of epidemic diseases on the network of students from Engineering Department at Universidad de Los Andes, Mérida, Venezuela.

- Formation of community structure driven by rewiring of links in social networks.
- Effect of external and autonomous fields in social coevolving networks.
- Avoiding an epidemic outbreak: competition between local and global information sources.
- Effects of community structure in multivalued prevalence curves.

Computational Experience:

- Linux OS.
- C Language.
- Basic Python.
- Windows OS.
- Gnuplot.
- Latex
- R

Research interests.

- Chaos and Complex systems.
- Complex Networks.
- Sociophysics.
- Econophysics.
- Coevolving Networks.
- Communities in complex networks.
- Epidemic disease propagation.
- Temporal networks.

Collaborators.

- Dr. Mario Cosenza (Universidad de Los Andes, Merida – Venezuela).
- Dr. Kay Tucci (Universidad de Los Andes, Merida – Venezuela).
- Dr. Desiderio Vasquez (PUCP, Lima Peru).
- Dr. Lauren Meyers (University of Texas at Austin, USA).
- Dr. Rosalind Eggo (London School of Hygiene and Tropical Medicine, University of London, England).
- Dr. Ravi Srinivasan (University of Texas at Austin, USA).

References:

- Dr. Lauren A. Meyers.
University of Texas at Austin.
laurenmeyers@austin.utexas.edu

- Dr. Mario Cosenza.
Universidad de Los Andes.
mcosenza@ula.ve
- Dr. Kay Tucci.
Universidad de Los Andes.
kay@ula.ve