

CURRICULUM GONZALO HERNANDEZ



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Academic Degrees: Doctor in Mathematical Modeling (University of Chile)
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Main Lines of Research: Modeling and Simulation of Complex Systems
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Research Projects (Last 5 years):

- 1) Computational and Geometric Function Theory 2007, Co-Investigator, FONDECYT N° 1070269, 2007 - 2009.
- 2) ALFA Projects European Community: SCAT - Scientific Computing and Advanced Training, Co-Investigator, 2006 – 2008.
- 3) ALFA Projects European Community: EELA - E-Infrastructure shared between Europe and Latin America, Co-Investigator, 2005 – 2007.
- 4) Dynamical Behavior of Complex Locally Interacting Systems, Principal Investigator, FONDECYT N° 1050808, 2005 - 2007.
- 5) Computational and Geometric Function Theory 2004 - 2006, Co-Investigator, FONDECYT N° 1040366, 2004-2006.
- 6) Scientific Computing and Complex Systems in Science and Engineering, Co-Investigator, UTFSM - DGIP 24.04.21, 2004 - 2006.
- 7) Sistema de Data Fusión para Radares, Co-Investigator, SISDEF - UTFSM, 2003 - 2004.
- 8) Scientific Computing and Large Scale Simulations of Non-Linear Complex Systems on Heterogeneous Computers Networks, Co- Investigator, UTFSM - DGIP 24.02.22, 2002 - 2004.

Publications (Last 5 years):

- 1) Harrison, R., G. Hernandez and R. Munoz A Welfare Analysis for the Access Charge Problem when Consumers are Socially Connected: The Nondiscriminatory Case, Submitted to Social Networks, 2007.
- 2) Hernandez, G., J. Cornejo and L. Salinas, Neural Network Heuristic for the Graph Bisection Problem, Submitted to Mathematical Methods in the Applied Sciences, 2007.
- 3) Hernandez, G., and L. Salinas, NER Automata Dynamics on Random Graphs, To appear in Lecture Series on Computer and Computational Sciences, 2007.

- 4) Hernandez, G., and L. Salinas, Neural Network Heuristic for the Graph Bisection Problem on Geometrically Connected Graphs, G. Hernandez and L. Salinas. Numerical Analysis and Applied Mathematics 2006, pp. 147 - 150, 2006.
- 5) N-ary Fragmentation Model with Nearest Point Flaw and Maximal Net Force Fracture, G. Hernandez, L. Salinas and A. Avila. Physica A, Vol. 370 Iss. 2, pp. 565 - 572, 2006.
- 6) Social Connections and Access Charge in Networks, R. Harrison, G. Hernandez and R. Munoz. Lecture Notes in Computer Science Vol. 3993, pp. 1091-1097, 2006.
- 7) Large-Scale Simulations of a Bi-dimensional N -ary Fragmentation, G. Hernandez, L. Salinas and A. Avila. Lecture Notes in Computer Science Vol. 3991, pp. 856-859, 2006.
- 8) Expected Transient Time and Damage Spreading for the NER Automaton on Geometrically Connected Graphs, G. Hernandez and L. Salinas. Physica A, Vol. 367 C pp. 173-180, 2006.
- 9) Large Scale Simulations of a Neural Networks Model for the Graph Bisection Problem on Geometrically Connected Graphs, G. Hernández and L. Salinas. Electronic Notes on Discrete Mathematics, Vol. 18, pp. 151 – 156, 2004.
- 10) Hernandez, G., M. Mendoza, B. Reusch, L. Salinas, Shiftability and filter bank design using Morlet wavelet, IEEE Computer Society ISBN 0-7695-2200-9, Vol. 1, Issue 1, pp. 141 - 148, 2004.
- 11) Two-Dimensional Model for Binary Fragmentation Process with Random System of Forces, Random Stopping and Material Resistance, G. Hernández, Physica A, Vol. 323, Iss. 1, pp. 1 - 8, 2003.
- 12) Parallel and Distributed Simulations and Visualizations of the Olami-Feder-Christiensen Earthquake Model, G. Hernández, Physica A, Vol. 313 Iss. 3 - 4, pp. 301-311, 2002.
- 13) Discrete Model for Fragmentation with Random Stopping, G. Hernández, Physica A, Volume 300, Issue: 1-2, pp. 13 - 24, 2001.
- 14) Dynamical Behavior of Kauffman Networks with AND/OR Gates, E. Goles and G. Hernández, Journal of Biological Systems, Vol. 8, No. 2, pp. 151-175, 2000.