

CURRICULUM VITAE

ENRIQUE PAZOS

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PERSONAL DETAILS

Gender: Male
Date of birth: December 13th, 1976
Place of birth: Guatemala City, Guatemala
Present citizenship: Guatemala

EDUCATION

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| 2005 – present | Ph.D. student in Physics, University of Maryland (transferred from Louisiana State University in July/2008)
Advisor: Dr. Manuel Tiglio
Dissertation: <i>Numerical studies of black holes and gravitational waves</i>
Expected graduation: July/2009 |
| 2002 – 2004 | Master of Science in Physics, University of Texas at Brownsville
Advisor: Dr. Carlos Lousto
Thesis: <i>Fourth-order convergent numerical integration of the Teukolsky equation</i> |
| 1995 – 2000 | Licenciado en Física Aplicada (Bachelor in Applied Physics), Universidad de San Carlos de Guatemala
Advisor: José Socorro García (Instituto de Física, Universidad de Guanajuato, México)
Thesis: <i>Applying the ADM lagrangian formalism to a cosmological model</i> (in Spanish) |
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PUBLICATIONS

1. “Comparing waveforms of various numerical relativity groups” (in preparation)
 2. “Binary black hole simulations using multi-block domains” (in preparation)
 3. “Solving the Einstein constraint equations on multi-block triangulations using finite element methods”
O. Korobkin, B. Aksoylu, M. Holst, E. Pazos and M. Tiglio
arXiv:0801.1823 [gr-qc]
 4. “How far away is far enough for extracting numerical waveforms, and how much do they depend on the extraction method?”
E. Pazos, E. N. Dorband, A. Nagar, C. Palenzuela, E. Schnetter and M. Tiglio
Class. Quant. Grav. **24**, S341 (2007) [arXiv:gr-qc/0612149]
 5. “Cauchy-perturbative matching revisited: tests in spherical symmetry”
B. Zink, E. Pazos, P. Diener and M. Tiglio
Phys. Rev. D **73**, 084011 (2006) [arXiv:gr-qc/0511163]
 6. “Numerical integration of the Teukolsky equation in the time domain”
E. Pazos-Avalos and C. O. Lousto
Phys. Rev. D **72**, 084022 (2005) [arXiv:gr-qc/0409065]
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WORK EXPERIENCE

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| 2005 – present | Research Assistant, University of Maryland and Louisiana State University. <i>Work on binary black hole evolutions using multi-block domains and mesh refinement, gravitational wave extraction using perturbation theory.</i> |
| 2004 – 2005 | Teaching Assistant, Louisiana State University. <i>Graded quizzes and exams for introductory physics course.</i> |
| 2002 – 2004 | Physics Lab Instructor, University of Texas at Brownsville. <i>Lectured, advised and graded lab reports on general physics experiments.</i> |
| 2000 – 2002 | Lecturer, Universidad de San Carlos, Guatemala. <i>Lectured, advised, evaluated and graded undergraduate level math and physics courses.</i> |
| 1998 – 2000 | Physics Lab Instructor, Universidad de San Carlos, Guatemala. <i>Lectured, advised and graded lab reports on general physics experiments.</i> |
| 1997 – 1998 | Lab Manual Designer, Universidad de San Carlos, Guatemala. <i>Wrote new lab manuals for experiments in general physics.</i> |

Courses Taught (undergraduate level)

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| 2002 & 2001 | Calculus, Differential equations, Fourier analysis |
| 2001 | General physics (electromagnetism) |
| 2000 | General physics 1 &2 (mechanics), Algebra and trigonometry |

Advising

2006 Co-advisor for undergraduate physics thesis *Faraday gravitational rotation in a weak gravitational field* (in Spanish), by Rodrigo Sacahui, Universidad de San Carlos de Guatemala

Service

2003, 2004 Judge in 2 high school science fairs, Brownsville TX. *Evaluated and ranked high school science projects.*

2001 – 2002 *Ad honorem* teaching of undergraduate courses: Electrodynamics 1 & 2 and Computer Programming in C++, Universidad de San Carlos, Guatemala. *Lectured, advised and evaluated students.*

2001 – 2002 *Ad honorem* system administrator (part-time) of the physics department Linux network, Universidad de San Carlos, Guatemala. *Mounted a Linux network from scratch, provided service and maintenance.*

08/2001 Judge in *Water-Rocket Launching* Scientific Contest, Guatemala. *Measured maximum heights reached by toy-rockets using a sextant.*

08/2000 Academic Committee, National Science Olympiad, Guatemala. *Oral examiner at the national high school physics contest.*

AWARDS

03/2007 APS Topical Group on Gravity. Award for best student presentation in the 3rd Gulf Coast Gravity Meeting in Huntsville, Alabama

06/2004 Award for meritorious participation, First Gravitational Wave Astronomy Summer School, South Padre Island, Texas

2007 – 2008 Ph.D. full time graduate assistantship from the Center of Computation and Technology, Louisiana State University

2004 – 2007 Ph.D. full scholarship, Louisiana State University

2002 – 2004 M.Sc. full scholarship, University of Texas at Brownsville

10/2000 ICTP and CLAF-M scholarship for thesis work at Instituto de Física de la Universidad de Guanajuato, México

2000, 1999, 1998 & 1995 Academic Excellence Award, Universidad de San Carlos, Guatemala

PRESENTATIONS

- *Last stages of spectral evolution via turducken method*, 11th Eastern Gravity Meeting, May/2008, Pennsylvania State University, University Park, PA, USA
- *The effect of the background geometry on the extracted waveforms*, 3rd Gulf Coast Gravity Meeting, Mar/2007, University of Alabama, Huntsville, AL, USA. **Best student presentation**
- *CactusEinstein analysis thorns*, Cactus Workshop, May/2006, Louisiana State University, Baton Rouge, LA, USA

- *Cauchy-perturbative matching revisited, tests in spherical symmetry*, 2nd Gulf Coast Gravity Meeting, Mar/2006, Florida Atlantic University, Boca Raton, FL, USA
- *Gravitational waves and the efforts to detect them* (in Spanish), Jul/2005, Universidad de San Carlos, Guatemala
- *4th order convergent numerical integration of Teukolsky equation*, Capra Meeting, Jun/2004, University of Texas, Brownsville, TX, USA
- *Gravitational waves* (in Spanish), Jul/2003, Universidad de San Carlos, Guatemala
- *Parallel computing* (in Spanish), Jun/2003, Universidad de San Carlos, Guatemala
- *Computer Simulations: Numerical Solutions of Equations*, Research Symposium, Apr/2002, University of Texas, Brownsville, TX, USA
- *Numerical solutions in quantum mechanics* (in Spanish), Jul/2000, Universidad de San Carlos, Guatemala
- *Using computers in physics* (in Spanish), Oct/2000, Universidad de San Carlos, Guatemala
- *The world of electromagnetism*, invited talk at a public school, May/1999, Guatemala

INDEPENDENT PROJECTS

2002	Toy model for simulating evolution and natural selection for two species, coded in C++
2002	Computer game where the user manipulates the force vector of a spaceship engine in orbit around the earth and the moon, taking into account relativistic effects, coded in C++ & QT library
2001	Simulation of a set of ants finding their way towards a food source by marking the path with pheromones, coded in C++
2001	N-body simulation for gravitational and electric interactions in 3 dimensions with an interactive real-time graphics display using the QT library, coded in C++
2000	N-body simulation using the tree-code algorithm