

# Biographical Sketch - Gabriel Nagy

Visiting Assistant Professor  
Department of Mathematics  
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## PROFESSIONAL PREPARATION AND APPOINTMENTS

- Fall 2008-Spring 2011, Visiting Assistant Professor, Michigan State University, USA.
- Fall 2005-Spring 2008, Assistant Project Scientist, University of California San Diego, USA.
- Fall 2004-Summer 2005, Visiting scholar, University of California San Diego, USA.
- Fall 2003-Summer 2004, Teaching visitor, University of California San Diego, USA.
- February 2002-June 2002, Lecturer, Instituto Universitario Aeronáutico, Argentina.
- April 2001-December 2001, Visiting professor (General Relativity), Albert Einstein Institut (MPI), Golm, Germany.
- April 2000-March 2001, Postdoctoral fellow (Applied Mathematics), University of Tours, France. Purview: Piotr Chruściel.
- April 1999-March 2000, Postdoctoral fellow (General Relativity), CONICET, at FaMAF, Universidad Nacional de Córdoba, Argentina. Purview: Oscar Reula.
- October 1998-June 1999, Visiting professor, Albert Einstein Institut (MPI), in Potsdam, Germany.
- April 1996-September 1998, DAAD Postdoctoral fellow (General Relativity), at Albert Einstein Institut (MPI), in Potsdam, Germany. Purview: Helmut Friedrich.
- Ph.D. Theoretical Physics, December 21, 1995, at FaMAF, Universidad Nacional de Córdoba, Argentina. Advisor: Oscar Reula.
- 1991-1995, Teaching Assistant, FaMAF, Universidad Nacional de Córdoba, Argentina. Doctoral fellowship from CONICOR.
- Licenciado en Física, (similar to BS.-MD. in Physics), 1984-1991, FaMAF, Universidad Nacional de Córdoba, Argentina.

## TEACHING AREAS

- Differential Equations: MSU 2008-2011, UCSD Spring 2008. Linear Algebra: MSU 2008-2011, UCSD 2005-2007. Calculus for Science and Engineering: MSU 2008-2011, UCSD 2003-2007. General and Advanced Physics Courses, University of Córdoba, FaMAF, Argentina 1991-1996 and Instituto Universitario Aeronáutico 2002.

## RESEARCH AREAS

- General Relativity, Geometric PDE, Differential Geometry.

## PREPRINTS AND BOOK PROJECTS

17. Ordinary Differential Equations. Lecture notes given at MSU, 2008-2011.
16. Linear Algebra. Lecture notes given at MSU, 2008-2011.
15. M. Holst, G. Nagy and O. Sarbach, *Stability reversal in fluid models of black strings for high space dimensions*. Preprint (2011).

## PUBLICATIONS

14. M. Holst, G. Nagy and G. Tsogtgerel, *Rough solutions of the Einstein constraints on closed manifolds without near-CMC conditions*. Commun. Math. Phys., **288**, Number 2, 547–613 (2009).
13. M. Holst, G. Nagy and O. Tsogtgerel, *Far-from-constant mean curvature solutions of Einstein's constraint equations with positive Yamabe metrics*. Phys. Rev. Lett. **100**, 161101 (2008).
12. G. Nagy, O. Sarbach, *A minimization problem for the lapse and the initial-boundary value problem for Einstein's field equations*, Class. Quantum Grav., **23**, S477–S504, (2006).

11. G. Nagy, O.E. Ortiz, O.A. Reula, *Strongly hyperbolic second order Einstein's evolution equations*, Phys. Rev. D, **70**, 044012 (2004).
10. S. Dain, G. Nagy, *Initial data for fluid bodies in general relativity*, Phys. Rev. D, **65**(8) 084020 (2002).
9. P. Chruściel, G. Nagy, *The mass of spacelike hypersurfaces in asymptotically anti-de Sitter space-times*, Advances on Theoretical and Mathematical Physics, **5**(4), July (2001). Available as gr-qc/0110014.
8. P. Chruściel, G. Nagy, *The Hamiltonian mass of asymptotically anti-de Sitter space-times*, Class. Quantum Grav. **18**(9) L61–L68 (2001).
7. R. Geroch, G. Nagy, O. Reula, *Relativistic Lagrange formulation* J. Math. Phys. **42** 3789–3808 (2001).
6. H. Friedrich, G. Nagy, *The initial boundary value problem for Einstein's vacuum field equation*, Commun. Math. Phys., **201** 619–655 (1999).
5. G. Nagy, O. Ortiz, O. Reula, *Exponential decay rates in quasi-linear hyperbolic heat conduction*, J. Non-equilib. Thermodyn. **22** 248–259 (1997).
4. H. Kreiss, G. Nagy, O. Ortiz, O. Reula, *Global existence and exponential decay for hyperbolic theories of relativistic dissipative fluids*, J. Math. Phys., **38** 5272–5279 (1997).
3. G. Nagy, O. Reula, *A causal statistical family of dissipative divergence type fluids*, J. Phys. A: Math. Gen., **30** 1695–1709 (1997).
2. G. Nagy, O. Reula, *On the causality of dilute gas as a dissipative relativistic fluid theory of the divergence type*, J. Phys. A: Math. Gen., **28** 6943–6959 (1995).
1. G. Nagy, O. Ortiz, O. Reula, *The Behavior of the Solutions of Hyperbolic Heat Equations Near their Parabolic Limits*, J. Math. Phys., **35** 4334–4356 (1994).

#### FUNDING AWARDS

- NSF DMS/CM 0715146 (PI, with M. Holst and D. Estep) \$180.000 2007-2010.

#### SELECTED SERVICE ACTIVITIES

- Technical reviewer: Classical and Quantum Gravity, Physical Review D.
- Technical reviewer: NSF funding proposals (panel review).

#### CONFERENCES AND WORKSHOPS

- Participant at the Caltech Visitor Program on Numerical Simulation of Gravitational Waves, at the ITP in Santa Barbara, October 31- November 2, 2002.
- Participant at the conference, Mathematical problems in general relativity, Physikzentrum Bad Honnef, Bonn, September 7-11 1998.
- Participant at the 14th and 15th Conference on General Relativity, Florence, Italy, August 1995; and Pune, India, December 1997, respectively.
- Attend at the Workshop on general theory of partial differential equations and micrological analysis, at the International Centre of Theoretical Physics, ICTP, Trieste, Italy, September 04 - 15, 1995.
- Attend at the Conference on partial differential equations and its applications on geometry, International Centre of Theoretical Physics, ICTP, Trieste, Italy, August 21 - September 01, 1995.

#### COLLABORATORS AND OTHER AFFILIATIONS

**Collaborators.** Dr. Sergio Dain, Albert Einstein Institut, Germany; Dr. Piotr Chruściel, University of Tours, France; Dr. Robert Geroch, University of Chicago, USA; Dr. Helmut Friedrich, Albert Einstein Institut, Germany; Dr. Michael Holst, University of California San Diego, USA; Dr. Heinz-Otto Kreiss, UC Los Angeles, USA; Dr. Omar Ortiz, University of Córdoba, Argentina; Dr. Oscar Reula, University of Córdoba, Argentina; Dr. Olivier Sarbach, Universidad Michoacana de San Nicolás de Hidalgo, Morelia, México.