

Renato Calleja

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Department of Mathematics
The University of Texas at Austin
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Education

- August 2004 - May 2009 (expected). Ph.D. *Mathematics*. University of Texas at Austin. Advisor: Rafael de la Llave.
- August 1999 - June 2004. B.S. *Applied Mathematics* (honors). Instituto Tecnológico Autónomo de México.
- January 2003 - June 2003. Exchange student, Universitat Autònoma de Barcelona.

Employment

- September 2008 - December 2008. *Visiting Researcher*. Centre de Recerca Matemàtica, Barcelona.
- Summer 2006, 2007, & 2008. *Graduate Research Assistant*. The University of Texas at Austin.
- August 2004 - May 2009. *Teacher Assistant*. The University of Texas at Austin.

Publications

- (with Rafael de la Llave) *Fast numerical computation of quasi-periodic equilibrium states in 1-D statistical mechanics models, including twist maps*, *Nonlinearity* 22, (2009) 1311-1336.
- (with Héctor E. Lomelí) *Heteroclinic bifurcations and chaotic transport in the two-harmonic Standard Map*, *Chaos* 16, 023117 (2006)
- (with Yannick Sire) *Travelling waves in discrete nonlinear systems with non-nearest neighbor interactions*, Preprint available at mp_arc 08-188 (submitted)
- (with Rafael de la Llave) *Computation of the breakdown of analyticity in statistical mechanics models*, Preprint available at mp_arc 09-56 (submitted)
- (with Rafael de la Llave) *A criterion for the breakdown of quasi-periodic solutions and its rigorous justification*, (In preparation), preprint available at <http://www.ma.utexas.edu/users/rcalleja/criterion6.pdf>.
- *Symplectic dynamics and numerical approximations of separatrices and chaotic transport*, ITAM. B.S. Report, 2004. (Spanish) Advisor: Hector Lomelí

Awards and Fellowships

- *Frank Gerth III Dissertation Award*. Department of Mathematics, University of Texas at Austin. Spring 2009
- *E.D. Farmer Fellowship*. The Mexican Center, University of Texas at Austin. Fall 2007 & Spring 2008.
- *Preemptive University Fellowship*. Department of Mathematics, University of Texas at Austin. Fall 2004 & Spring 2005

Recent Conference and Seminar Talks

- *Fast computation of quasi-periodic solutions and their breakdown*. Centre de Recerca Matemàtica. Barcelona, Spain. October 8 2008.
- *Travelling waves in nonlinear discrete systems with extended interactions*. AIMS' 7th International Conference on Dyn. Systems, Diff. Equations and Applications. Arlington, USA. May 19 2008
- *Numerical computation quasi-periodic equilibrium states in 1-D statistical mechanics models*. AIMS' 7th International Conference on Dyn. Systems, Diff. Equations and Applications. Arlington, USA. May 20 2008
- *Numerical computation of KAM tori for equilibrium states in 1-D statistical mechanics models*. IIMAS-UNAM, *Nonlinear Waves in Continuous and Discrete Systems*. Mexico City, Mexico. January 29 2008
- *Persistence of Invariant Manifolds in the Extended Frenkel-Konotorova Model*. UPC, Dynamical Systems Seminar. Barcelona, Spain. February 15 2007
- *Heteroclinic bifurcations and chaotic transport in the two-harmonic Standard Map*. AIMS' 6th International Conference on Dyn. Systems, Diff. Equations and Applications. Poitiers, France. June 18 2006

Recent Courses and Seminars Attended

- *Parallel Programming for Clusters and Shared Memory Systems, TACC*. Austin, USA. October 2007.
- *Hamiltonian Dynamical Systems and its Applications, CRM*. Montreal, Canada. June 2007.
- *Jornades de Introducció als Sistemes Dinàmics, UPC*. Barcelona, Spain. June 2007.
- *Computer Assisted Proofs, UB*. Barcelona, Spain. February 2007.

- *Recent Trends in Non-Linear Science*. Granada, Spain. February 2007.
- *Jornades de Introducció als Sistemes Dinàmics, UPC*. Barcelona, Spain. June 2003.

Proficiency in Languages other than English

Spanish (native), French, Portuguese.

Computer Skills

C/C++, Fortran, MATLAB, Maple, UNIX, HTML, Microsoft Office.

References

- Hans Koch. The University of Texas at Austin. `koch@math.utexas.edu`
- Rafael de la Llave. The University of Texas at Austin. `llave@math.utexas.edu`
- Hector Lomelí. Instituto Tecnológico Autónomo de México. `lomeli@itam.mx`
- Lorenzo Sadun (teaching). The University of Texas at Austin.
`sadun@math.utexas.edu`
- Yannick Sire. Universite Paul Cezanne, Aix-Marseille 3. `sire@cmi.univ-mrs.fr`