

MARCELO VIANA

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Birth: March 4, 1962 - Rio de Janeiro

Degrees: B.Sc. University of Porto, 1984, Ph.D. IMPA, 1990

Current Position: Professor of Mathematics, IMPA, Rio de Janeiro

Research Interests: Dynamical Systems, Ergodic Theory, Bifurcation Theory

Students: Supervised the theses of 26 Ph D students, from 9 countries

Editor/Editorial Board Member: for 8 mathematical journals

Organization: (co)organized about 40 scientific meetings, in 7 countries

Selected Invited Lectures

Plenary Speaker, International Congress of Mathematical Physics, Paris, 1994
Session Speaker, International Congress of Mathematicians, ICM-Zurich, 1994
Plenary Speaker, International Congress of Mathematicians, ICM-Berlin, 1998
Equadiff, Berlin, 1999
Medal Lecture, 1st Latin American Congress of Mathematicians, Rio de Janeiro, 2000
Petrovskii Centenary Conference, Moscow, 2001
Colloque Michael Herman, Institut Henri Poincaré, Paris, 2002
Clay Institute Conference on Dynamical Systems, MSRI, Berkeley, 2004
Nonlinear Science in 3 Continents, Consortium for the Americas, Santa Fé, 2005
European Conference on Complex Systems, Oxford, 2006
Mathematics in the World, Hungarian Academy of Sciences, 2008
Dynamical Trends in Analysis, Royal Institute of Technology, Stockholm, 2009

Distinctions

Guggenheim Foundation Fellowship, 1993-1994
Member, Brazilian Academy of Sciences, elected in 1997
TWAS Award in Mathematics, Academy of Sciences for the Developing World, 1998
Grand Croix Order of Scientific Merit, granted by the President of Brazil, 2000
UMALCA Prize, Mathematical Union for Latin America and Caribbean, 2000
Member, Academy of Sciences for the Developing World, elected in 2000
Ramanujan Prize, ICTP, 2005
Member, Portuguese Academy of Sciences, elected in 2006
Prize University of Coimbra, 2007
Member, Chilean Academy of Sciences, elected in 2009

Selected Academic Functions

IMPA - Instituto de Matemática Pura e Aplicada
Chair for Scientific Activities (1996--2003)
and Deputy Director (2004-2007)
UMALCA - Mathematical Union for Latin America and the Caribbean
Scientific Coordinator (2001--2008)
CNPq - Brazil's National Research Council
Chair, Committee for Mathematics (1998--2001 and 2004--2007)
Member, Directing Council (2009-2011)
CAPES - Brazil's Graduate Studies Agency
Chair, Committee for Mathematics (2008--2010)
IMU - International Mathematical Union
Member, Executive Committee (2007-2010)
SBM - Brazilian Mathematical Society
Vice-President (2009-2011)
TWAS - Academy of Sciences for the Developing World
Chair, Regional Office for Latin America and the Caribbean (2009-2012)



Selected Publications (complete list at www.impa.br/viana/#Curriculum)

Abundance of strange attractors,

with L. Mora, *Acta Mathematica* 171 (1993), 1-71.

High dimension diffeomorphisms displaying infinitely many periodic attractors,

with J. Palis, *Annals of Math.* 140 (1994), 207-250.

Strange attractors in saddle-node cycles: prevalence and globality,

with L. J. Díaz and J. Rocha, *Invent. Math.* 125 (1996), 37-74.

Multidimensional nonhyperbolic attractors,

Publ. Math. IHES. 85 (1997), 63-96.

Infinite-modal maps with global chaotic behavior,

with M. J. Pacifico and A. Rovella, *Annals of Math.* 148 (1998), 1-44.

Dynamics: a probabilistic and geometric perspective,

Documenta Mathematica - ICM98 vol. 1 (1998), 557-578.

SRB measures for partially hyperbolic systems whose central direction is mostly expanding,

with J. F. Alves and C. Bonatti, *Inventiones Math.* 140 (2000), 351-398.

Solution of the basin problem for Hénon-like attractors,

with M. Benedicks, *Inventiones Math.* 143 (2001), 375--434.

Lyapunov exponents of generic volume preserving and symplectic systems,

with J. Bochi, *Annals of Math.* 161 (2005), 1423-1485.

Simplicity of Lyapunov spectra: Proof of the Zorich-Kontsevich conjecture,

with A. Avila, *Acta Math.* 198 (2007), 1--56.

Almost all linear cocycles over a hyperbolic system have non-vanishing Lyapunov exponents,

Annals of Math. 167 (2008), 645--682.

Extremal Lyapunov exponents: an invariance principle and applications,

with A. Avila, *Inventiones Math.* 181(2010), 115-178.

Book: *Dynamics beyond uniform hyperbolicity,*

with C. Bonatti and L. J. Díaz, vol 102 of *Enc. Math. Sciences*, Springer Verlag, Heidelberg, 2004.

Statement: I accept to continue serving in the IMU Executive Committee.

IMU aims to promote and represent Mathematics at the global scale, in a world where mathematicians move and collaborate freely across national borders. In the past, substantial work and diplomatic skill were employed to try and bring to the Union's fold countries separated by world political tensions, and establish IMU as the truly international body it now is. In retrospect, progress has been remarkable, particularly when dealing with the most developed countries.

Much remains to be done for the Union to achieve comparable presence in the developing world. The 2006 General Assembly recommended that the role of IMU in support of Mathematics in the developing world be enhanced and expanded. As a member of the Executive Committee, I would take a special interest in collaborating with the newly created Commission for Developing Countries, enhancing IMU membership in all continents, improving the representation of developing countries in all the Union's activities, and, in general, helping bring IMU closer to the daily work of mathematicians around the world.