

ANTHONY M. BLOCH

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Professional preparation:

University of the Witwatersrand, Johannesburg	B.Sc., B.Sc.(Hons.) (Applied Mathematics and Physics)	1977,78
California Institute of Technology, Pasadena	M.S (Physics) CA	1979
Cambridge University, Cambridge, England	M.Phil.(Control Engineering and Operations Research)	1981
Harvard University, Cambridge, MA	Ph.D. (Applied Mathematics)	1985

Appointments:

Editor-in-Chief, Journal Nonlinear Science, 2018-	
Book Series Editor, Springer Applied Mathematics, 2018-	
Editor-in Chief, SIAM Journal on Control and Optimization	2012-2018
The University of Michigan	
Chair of Mathematics Department	2005-2008, 2017-2023
Alexander Ziwet Collegiate Professor	2005-
Associate Chair for Graduate Affairs	2001-2004
Professor of Mathematics	1997-
Associate Professor of Mathematics	1994-1997
The Institute for Advanced Study, Princeton	
Member	Jan – April, 1997
The Ohio State University	
Associate Professor of Mathematics	1992-95
Assistant Professor of Mathematics	1988-92
Mathematical Sciences Institute, Cornell University	
Postdoctoral Associate	1988-89
The University of Michigan	
T.H. Hildebrandt Research Assistant Professor	1985-88

Five Closely Related Publications

Hamel's formalism for infinite-dimensional nonholonomic systems, *Journal of Nonlinear Science* **27** (2017), 241-283 (with D. Shi, Y. Berchenko-Kogan, and D. Zenkov).

Steering the eigenvalues of the density operator in Hamiltonian-controlled quantum Lindblad systems, in *IEEE Trans. Aut. Control* **63** 672-681 (2018) (with P. Rooney and C. Rangan)

A Poincare-Bendixson theorem for hybrid systems, *Mathematical Control and Related Fields* **10**, 27-45 (2020)(with W. Clark and L. Colombo)

Families of periodic orbits: closed 1-forms and global continuability, *The Journal of Differential Equations* **285**, 211-257 (2021) (with M. Kvalheim).

Multilinear control systems theory, *The SIAM J. of Control and Optimization* **59**, 749-776 (2021) (with Chen, C., Surana, A. and Rajapakse, I.)

Other Significant Publications

Nonholonomic Mechanics and Control, Springer Graduate Text, 2003, second edition, 2016 (with the collaboration of J.Baillieul, P.E. Crouch and J.E. Marsden).

The Principle of Least Action, History and Physics, Cambridge University Press, 2018 (with A. Rojo)

Flag-based Control of Quantum Purity for $n = 2$ Systems, *Phys. Rev. A* **93**, 063424, 2016 (with P. Rooney and C. Rangan)

Symmetry in legged locomotion: A new method for designing stable periodic gaits, *Journal of Autonomous Robots*, doi:10.1007/s10514-016-9593-x, (2016) 1-24 (with Razavi, H. C. Chevallereau, and J. W. Grizzle.

The Clebsch representation in optimal control and low rank integrable systems, in the *Computation and Combinatorics in Dynamics, Stochastics and Control, Proceedings of the Abel Symposium, 2016* E.Celedoni, G. Di Nunno, G. Ebrahimi-Fard and K. Munthe-Kaas eds., Springer 2018 (with Francois Gay-Balmaz and Tudor Ratiu).

Synergistic Activities:

Chair of Dept. of Mathematics, University of Michigan

Supervised and graduated Ph.D students

Served as postdoctoral advisor in engineering and mathematics departments

Editor-Chief Journal Nonlinear Science

Editor-in-Chief, Springer book series in Applied Mathematics