STEVEN TOMSOVIC

Washington State University

Born April 17, 1958, New Orleans, La.; fluent French.
URL - http://www.physics.wsu.edu/research/QuantumChaos/index.htm

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Education:

Institution	Degree	Dates
Michigan Technological University	B.S. Physics with high honors	1980
University of Rochester, New York	M.A., Ph.D. Physics	1982, 1987

Thesis title: "*Bounds on the Time-Reversal Noninvariant Nucleon-Nucleon Interaction Derived from Transition Strength Fluctuations*", UR report no. 974
Thesis Advisor: Professor J. Bruce French

Professional Experience:

Institution	Position	Dates
Washington State University	Professor	2003-present
	Chair	2002-2010
	Associate Professor	2000-2003
	Assistant Professor	1994-2000
Indian Institute of Tech. Madras, Chennai	Visiting Professor	2010-2011
Lab. Phys. Théor. Mod. Stat., Orsay, France	Professeur Invité	2007
Harvard University &	Visiting Scholar	1993-94
Harvard-Smithsonian Center for Astrophysics	Visiting Fellow	
University of Washington, Seattle	Res. Asst. Prof.	1991-1994
University of California, Santa Cruz	Visitor, part time	1991-92
University of Washington, Seattle	Postdoc. Res. Assoc.	1988-91
Institut de Physique Nucléaire, Orsay, France	Postdoctoral Fellow	1986-88

Fellowships and Awards:

APS Outstanding Referee	2015
Senior Fellow, Technische Universität Dresden	2015
WSU College of Sciences Distinguished Faculty Award	2012
Mercator Fellow - Forschergruppe 760, DFG	2011-2013
Senior Research Fulbright Fellow, Technische Universität Dresden	2011
Scholarship & Advanced Study Group Head, MPIPKS, Dresden	2011
Inductee, Michigan Tech. Univ. Academy of Sciences and Arts	2008
Gutzwiller Fellow, Max-Planck-Institut für Physik komplexer Systeme	2006-2007
Harvard-Smithsonian Observatory Visiting Fellowship	1993-1994
Joliot-Curie Fellow, Institut de Physique Nucléaire	1986-87
Rush Rhees Fellow, University of Rochester	1980-83

Educational and Service Activities:

Courses	Dates
Phys 102 - General Physics	Spring 2001, 2004
Phys 202 - Classical Physics	Spring 1995, 2000, 2003, 2012, Fall 2011
Phys 521 - Classical Mechanics	Fall 1996 - 2000
Phys 550 - Quantum Mechanics I	Fall 2012, 2013, 2014
Phys 551 - Quantum Mechanics II	Spring 2013, 2104
Phys 552 - Advanced Quantum Mechanics	Fall 1994 - 1998, 2004
Phys 571 - Mathematical Methods for Physicists	Fall 2005, 2007 - 2009

Invited Lecture Series	Dates
31^{st} Winter School of Theoretical Physics, Karpacz, Poland	February 1995
Autumn School of Theoretical Physics, Taipei, Taiwan	October 1998
Path integrals and semiclassics workshop, Dresden, GE	August 2008

Sabbaticals	Dates
Visiting Professor, Indian Institite Tech. Madras, Chennai, India Senior Research Fulbright Fellow & Fellow of Forschergruppe 760, DFG, Technische Universität Dresden, Germany Advanced Study Group Convenor & Scholarship, "Towards a Semiclassical Theory of Dynamical Tunneling," MPIPKS, Dresden Lab. Physique Théorique et Modèles Statistiques, Orsay, France	2010 - 2011
Rosenstiel School of Marine and Atmospheric Sci., U. Miami Max-Planck-Institut für Physik komplexer Systeme, Dresden, GE Harvard University, Cambridge, MA Lab. Physique Théorique et Modèles Statistiques, Orsay, FR	2001 - 2002

Departmental and University Service	Dates
Chair, classroom space committee	2014 - 2015
Chair, Theory faculty search committee	2012 - 2013
College of Science awards committee	2011 - 2012
College of Science reorganization committee	2009 - 2010
Theory faculty search committee	2007 - 2008
GAANN Fellowship program	2006 - 2012
President's Council for the Advancement of Women	2004 - 2005
University Honorary Doctorates committee	2003 - 2006
Space committee	2002 - 2003
Chair, William Band Professor search committee	2001 - 2003
Chair, Theory faculty search committee	2000 - 2001
Astrophysics faculty search committee	2000 - 2001
Physics Club, SPS Advisor	1999 - 2001
Senior Theorist faculty search committee	1998 - 1999
Designed 2 undergrad. degree programs	1995 - 1996
Constructed Ph. D. preliminary exam	1994 - 1999

Supervisory Activities:

Postdocs and visitors	Period	Ph. D. and Masters students	Period
		Huichao Li	2014 -
Harinder Pal	10/12 – 12/13	Mark Kohan	2014 -
Manan Vyas	10/11 – 9/13	Jizhou Li	2011 -
Konstantin Koupstov	4/02 – 5/05	Wyatt Brege	2011 - 2012
Nicholas Cerruti	1/01 – 8/05	Shoresh Shafei	2008
Jian Huang	9/02 – 1/03	Muhammad Asad-Uz Zaman	2004 - 2007
Srihari Keshavamurthy	12/00 – 8/01	Katherine Hegewisch	2001 - 2010
Michael Wolfson	8/98 – 5/01	Tatsuro Nagano	1998 - 2002
Arul Lakshminarayan	11/98 – 8/99	Nicholas Cerruti	1996 - 2000
Julie Lefebvre	8/95 – 5/98	Brian Watkins	1996 - 2002
Patrick W. O'Connor	1/94 – 9/94	I. Mariana Suarez Barnes	1991 - 1992
Mark Mallalieu	6/94 – 9/94	Mark Nockleby	1991 - 1992

Undergraduate students	Period		Period
Alexander Davis	2010 - 2013	Adam Meier	2004
Elizabeth Bernhardt, REU	2009	Amit Grover	2000
John Elton, REU	2007 - 2008	Arthur C. Binner	1995 - 1999
Scott Clark, REU	2007		

International Programs and Workshops Organized:

"*Applications of Chaos in Many-Body Quantum Physics*" Institute for Nuclear Theory, Seattle	June 13 - September 2, 1994 Lead Organizer
"*Workshop of same title as above*" Institute for Nuclear Theory, Seattle	June 20 - 24, 1994 Lead Organizer
"*Quantum Chaos in Mesoscopic Physics*" Institute for Theoretical Physics, Santa Barbara	February 5 - June 29, 1996 Co-organizer
"*Chaos in Mesoscopic Systems*" Institute for Theoretical Physics, Santa Barbara	April 29 - May 3, 1996 Sole Organizer
"*Tunneling in Complex Systems*" Institute for Nuclear Theory, Seattle	February 24 - May 30, 1997 Lead Organizer
"*Workshop of same title as above*" Institute for Nuclear Theory, Seattle	March 31 - April 4, 1997 Sole organizer
"*Fifth Workshop on Quantum Nonintegrability: Molecular Systems and General Theory*" Inst. for Theor. Atomic and Mole. Phys., Harv.-Smith.	April 30 - May 2, 1998 Co-organizer
"*Wavepackets, Chaos, and Scattering: from Chemistry to Physics and back*" Inst. for Theor. Atomic and Mole. Phys., Harv.-Smith.	October 7 - 9, 2010 Co-organizer

"*Towards a Semiclassical Theory of Dynamical Tunneling*	April 1 - August 15, 2011
Max-Planck-Institut für Physik komplexer Systeme	Co-organizer
"*Workshop of same title as above*	June 14 - 17, 2011
Max-Planck-Institut für Physik komplexer Systeme	Co-organizer
"*Wave Chaos from the Micro- to the Macro-scale*	October 22-26, 2012
Max-Planck-Institut für Physik komplexer Systeme	Co-organizer
"*Martin Gutzwiller's scientific universe: From wave functions over periodic orbits to sun, moon and earth*	October 28-31, 2015
Max-Planck-Institut für Physik komplexer Systeme	Co-organizer

International Advisory Committee:

Program and Location	Dates
"*Quantum chaos and quantum information*" Workshop, IIT Madras, Chennai, India	July 21 - 25, 2010
"*Perspectives in Nonlinear Dynamics 2010*" Conference, IISC, Bangalore, India	July 26 - 29, 2010

Total Funding History:

Supporting Agency	Total Budget	Period
NSF, PI	$ 1,081,984	5/93 - 7/13
ONR, PI	$ 653,091	11/97 - 12/05
GAANN, Dept. of Ed., PI	$ 773,643	8/06 - 7/12

Professional Activities and Memberships:

External Review:
Department of Physics, Utah State University: Chaired external review committee with Richard Wolf, Rice University, and Todd Moon, Utah State University, 2009

Promotion Review for:
Lev Kaplan, to full Prof., Tulane University, 2012
Philippe Jacquod, to full Prof., University of Arizona, 2012
Charles Stafford, to full Prof., University of Arizona, 2011
Henning Schomerus, University of Lancaster, 2009
Lev Kaplan, to Assoc. Prof. with tenure, Tulane University, 2009
Peter Schlagheck, University of Regensburg, 2007

External HabilitationExaminer:
Technische Universität Dresden, Germany: Steffen Löck, 2014

External Ph.D. Examiner:
Indian Institute of Technology Madras: M S Ramkarthik, 2013
Technische Universität Dresden, Germany: Lars Schilling, 2007
Technische Universität Dresden, Germany: Matthias Michler, 2011

Reviewer for:
Granting Agencies: NSF, Pet. Res. Fund, Eng. and Phys. Sci. Res. Counc. UK, US-Israeli Binational Science Foundation
Journals: Rev. Mod. Phys., Science, PRL, PRA, PRC, PRE, Ann. Phys., Physica D, Europhys. Lett., Phys. Lett. A & B, J. Phys. A, Chaos, Eur. Phys. Jour. B, SIADS, Opt. Express, and Am. Journ. Phys.

Memberships:
American Physical Society – Div. of Cond. Mat. Phys., Div. of Nucl. Phys.
Acoustical Society of America

Invited Conference Talks and Colloquia (more recent):

BEC and Quantum Chaos, Inst. de Estudos Avancados of U. Sao Paulo	March 2015
Quantum Chaos: fund. and apps., School for advanced sciences Luchon	March 2015
Echoes in Complex Systems, MPIPKS, Dresden, GE	September 2014
Wandering from Nuclei to Chaos, Orsay, France	March 2014
Colloquium, Washington State University, Pullman, WA	September 2011
Colloquium (2 lectures), Chennai Mathematical Institute, India	February 2011
Colloquium, Jawaharlal Nehru University, New Delhi, India	January 2011
Colloquium, Indian Institute of Technology, Kanpur, India	January 2011
Colloquium, Udaipur Solar Observatory, Udaipur, India	December 2010
Colloquium, Physical Research Labs., Ahmedabad, India	December 2010
Colloquium, Indian Institute of Sci., Educ., & Res., Pune, India	December 2010
Colloquium, Bhabha Atomic Research Center, Mumbai, India	December 2010
"*Perspectives in Nonlinear Dynamics 2010* " IISC, Bangalore, India	July 2010
"*Quantum chaos and quantum information*" (lead tutorial)	July 2010
Indian Institute of Technology Madras, Chennai, India	
3rd. Work. on quantum chaos: theory & appl., Buenos Aires, Arg.	December 2009
Tunneling and Scatt. in Complex Sys. (lead talk), Dresden, GE	September 2009
From Femtoscience to Nanoscience, NINT, Seattle	August 2009
Nonlinear Dynamics in Quantum Systems, Krasnoyarsk, Siberia	July 2009
Penetrating physics by random matrices, Cuernavaca, Mexico	March 2009
Colloquium, Michigan Technological University, Houghton	September 2008
Quantum dynamical concepts: from path..., MPIPKS, Dresden, GE	August 2008
Random Matrix Theory and Applications:..., Orsay, France	June 2008
Quantum Chaos: Routes to RMT Statistics..., BIRS, Banff, Can.	February 2008
Colloquium, Washington State University, Pullman	October 2007
Dynamics Days Invited Talk, Loughborough, England	July 2007
Martin Gutzwiller Fellowship Colloquium, MPIPKS, Dresden, GE	May 2007
Colloquium, University of Palma, Palma di Mallorca, Spain	May 2007
Colloquium, University of Regensburg, Regensburg, Germany	April 2007
Colloquium, Technical University, Darmstadt, Germany	April 2007
Dynamics Session, DPG March Meeting, Regensburg, GE	March 2007
Colloquium, Catholic University, Leuven, Belgium	March 2007

Invited Research Seminars (more recent):

Institution	Dates
Max Planck Institute for Complex Systems, Dresden, Germany	October 2012
Max Planck Institute for Complex Systems, Dresden, Germany	August 2011
University of Regensburg, Regensburg, Germany	July 2011
Lab. de Physique Théorique et Modèles Statistiques, Orsay, France	July 2011
Institute of Physics and Chemistry of Materials, Strasbourg, France	June 2011
Max Planck Institute for Complex Systems, Dresden, Germany	May 2011
Max Planck Institute for Complex Systems, Dresden, Germany	May 2011
Tokyo Metropolitan University, Tokyo, Japan	February 2011
Jawaharlal Nehru University, New Delhi, India	January 2011
Indian Institute of Technology, Kanpur, India	January 2011
Bhabha Atomic Research Center, Mumbai, India	December 2010
University of Marburg, Marburg, Germany	June 2007
Max Planck Institute for Complex Systems, Dresden, Germany	February 2007
Lab. de Physique Théorique et Modèles Statistiques, Orsay, France	February 2007
Max Planck Institute for Complex Systems, Dresden, Germany	November 2006

Refereed publications:

[1] K. C. Hegewisch and S. Tomsovic, "Constructing acoustic timefronts using random matrix theory," *J. Acoust. Soc. Am.*, vol. 134, p. 3174, 2013, arXiv:1206.4709 [math-ph].

[2] C. Gorini, R. A. Jalabert, W. Szewc, S. Tomsovic, and D. Weinmann, "Theory of scanning gate microscopy," *Phys. Rev. B*, vol. 88, p. 035406, 2013, arXiv:1302.1151 [cond-mat.mes-hall].

[3] M. Michler, A. Bäcker, R. Ketzmerick, H.-J. Stöckmann, and S. Tomsovic, "Universal quantum localizing transition of a partial barrier in a chaotic sea," *Phys. Rev. Lett.*, vol. 109, p. 234101, 2012, arXiv:1206.3118 [nlin.CD].

[4] U. T. Bhosale, S. Tomsovic, and A. Lakshminarayan, "Entanglement between two subsystems, the wigner semicircle and extreme value statistics,," *Phys. Rev. A*, vol. 85, p. 062331, 2012, arXiv:1202.2982 [quant-ph].

[5] M. Díaz, P. A. Mello, M. Yépez, and S. Tomsovic, "Wave transport in one-dimensional disordered systems with finite-width potential steps," *Europhys. Lett.*, vol. 97, p. 54002, 2012, arXiv:1107.4991 [cond-mat.dis-nn].

[6] K. C. Hegewisch and S. Tomsovic, "Random matrix theory for underwater sound propagation," *Europhys. Lett.*, vol. 97, no. 3, p. 34002, 2012, arXiv:1104.3975 [physics.ao-ph].

[7] A. Lakshminarayan and S. Tomsovic, "On the kolmogorov-sinai entropy of many-body hamiltonian systems," *Phys. Rev. E*, vol. 84, p. 016218, 2011, arXiv:1102.2796 [nlin.CD].

[8] J. R. Elton, A. Lakshminarayan, and S. Tomsovic, "Fluctuations in classical sum rules," *Phys. Rev. E*, vol. 82, p. 046223, 2010, arXiv:0905.3523 [nlin.CD].

[9] R. A. Jalabert, W. Szewc, S. Tomsovic, and D. Weinmann, "What is measured in the scanning gate microscopy of a quantum point contact?" *Phys. Rev. Lett.*, vol. 105, p. 166802, 2010, arXiv:1007.2605 [cond-mat.mes-hall].

[10] A. Bäcker, B. Dietz, T. Friedrich, M. Miski-Oglu, A. Richter, F. Schäfer, and S. Tomsovic, "Friedel oscillations in microwave billiards," *Phys. Rev. E*, vol. 80, p. 066201, 2009, arXiv: 0910.2855 [nlin.CD].

[11] C.-M. Goletz, F. Grossmann, and S. Tomsovic, "Investigating quantum transport with an initial value representation of the semiclassical propagator," *Phys. Rev. E*, vol. 80, p. 031101, 2009, arXiv: 0905.3523 [nlin.CD].

[12] D. Ullmo, S. Tomsovic, and A. Bäcker, "Semiclassical theory of nonlocal statistical measures: Residual coulomb interactions," *Phys. Rev. E*, vol. 79, p. 056217, 2009, arXiv:0812.5110 [cond-mat].

[13] R. G. Nazmitdinov, E. I. Shahaliev, M. K. Suleymanov, and S. Tomsovic, "Analysis of nucleus-nucleus collisions at high energies and random matrix theory," *Phys. Rev. C*, vol. 79, p. 054905, 2009, arXiv:0804.0976 [nucl-ex].

[14] S. Tomsovic, D. Ullmo, and A. Bäcker, "Residual coulomb interaction fluctuations in chaotic systems: the boundary, random plane waves, and semiclassical theory," *Phys. Rev. Lett.*, vol. 100, p. 164101, 2008, arXiv:0712.0225 [cond-mat].

[15] A. Lakshminarayan, S. Tomsovic, O. Bohigas, and S. Majumdar, "Extreme statistics of complex random and quantum chaotic states," *Phys. Rev. Lett.*, vol. 100, p. 044103, 2008, arXiv:0708.0176 [nlin.CD].

[16] S. Tomsovic and A. Lakshminarayan, "Fluctuations of finite-time stability exponents in the standard map and the detection of small islands," *Phys. Rev. E*, vol. 76, p. 036207, 2007, arXiv:0706.1494 [nlin.CD].

[17] K. C. Hegewisch, N. R. Cerruti, and S. Tomsovic, "Ocean acoustic wave propagation and ray method correspondence: internal waves," *J. Acoust. Soc. Am.*, vol. 117, pp. 1582–1594, 2005, arXiv:0312150 [physics].

[18] N. R. Cerruti, S. Keshavamurthy, and S. Tomsovic, "Exploring classical phase space structures of nearly integrable and mixed quantum systems via parametric variation," *Phys. Rev. E*, vol. 68, p. 056205, 2003, arXiv:0306050 [nlin.CD].

[19] S. Tomsovic, D. Ullmo, and T. Nagano, "Breaking time reversal in a simple, smooth, chaotic system," *Phys. Rev. E*, vol. 67, p. 067201, 2003, arXiv:0302034 [nlin.CD].

[20] F. J. Beron-Vera, M. G. Brown, J. A. Colosi, S. Tomsovic, A. L. Virovlyansky, M. A. Wolfson, and G. M. Zaslavsky, "Ray dynamics in a long-range acoustic propagation experiment," *J. Acoust. Soc. Am.*, vol. 114, pp. 1226–1242, 2003, arXiv:0301026 [nlin.CD].

[21] D. Ullmo, T. Nagano, and S. Tomsovic, "Quantum dot ground state energies and spin polarizations: soft versus hard chaos," *Phys. Rev. Lett.*, vol. 90, p. 176801, 2003, cond-mat/0211412; selected by Virtual Journ. of Nanoscale Sci. & Tech.

[22] M. G. Brown, J. A. Colosi, S. Tomsovic, A. L. Virovlyansky, M. A. Wolfson, and G. M. Zaslavsky, "Ray dynamics in long-range deep ocean sound propagation," *J. Acoust. Soc. Am.*, vol. 113, pp. 2533–2547, 2003, nlin.CD/0109027.

[23] N. R. Cerruti and S. Tomsovic, "A uniform approximation for the fidelity in chaotic systems," *J. Phys. A: Math. Gen.*, vol. 36, pp. 3451–3465, 2003, arXiv:0210030 [nlin.CD]; corrigenda *J. Phys. A: Math. Gen.* vol. 36, 11915 (2003).

[24] A. M. O. de Almeida, C. H. Lewenkopf, and S. Tomsovic, "On resumming periodic orbits in integrable systems," *J. Phys. A: Math. Gen.*, vol. 35, pp. 10 629–10 642, 2002, quant-ph/0207148.

[25] S. Keshavamurthy, N. R. Cerruti, and S. Tomsovic, "Analyzing intramolecular vibrational energy redistribution via the overlap intensity-level velocity correlator," *J. Chem. Phys.*, vol. 117, pp. 4168–4177, 2002, arXiv:0202005 [nlin.CD].

[26] N. R. Cerruti and S. Tomsovic, "Sensitivity of wave field evolution and manifold stability in chaotic systems," *Phys. Rev. Lett.*, vol. 88, p. 054103, 2002, arXiv:0108016 [nlin.CD]; over 110 citations.

[27] E. E. Narimanov, H. U. Baranger, N. R. Cerruti, and S. Tomsovic, "Semiclassical theory of coulomb blockade peak heights in chaotic quantum dots," *Phys. Rev. B*, vol. 64, no. 23, p. 235329, Nov 2001, arXiv:0101034 [cond-mat].

[28] D. A. Smith, J. D. Bowman, B. E. Crawford, C. A. Grossmann, T. Haseyama, M. B. Johnson, A. Masaike, Y. Matsuda, G. E. Mitchell, V. A. Nazarenko, S. I. Penttila, N. R. Roberson, S. J. Seestrom, E. I. Sharapov, L. M. Smotritsky, S. L. Stephenson, S. Tomsovic, and V. W. Yuan, "Parity violation in neutron resonances of ^{117}sn," *Phys. Rev. C*, vol. 64, p. 015502, 2001.

[29] M. A. Wolfson and S. Tomsovic, "On the stability of long-range sound propagation through a structured ocean," *J. Acoust. Soc. Am.*, vol. 109, pp. 2693–2703, 2001, arXiv:0002030 [nlin.CD].

[30] S. Tomsovic, "Tunneling and chaos," *Physica Scripta*, vol. T90, pp. 162–165, 2001, arXiv:0008031 [nlin.CD].

[31] D. Ullmo, T. Nagano, S. Tomsovic, and H. U. Baranger, "Semiclassical density functional theory: Strutinsky energy corrections in quamtum dots," *Phys. Rev. B*, vol. 63, p. 125339, 2001, arXiv:0007330 [cond-mat].

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[33] N. R. Cerruti, A. Lakshminarayan, J. H. Lefebvre, and S. Tomsovic, "Exploring phase space localization of chaotic eigenstates via parametric variation," *Phys. Rev. E*, vol. 63, p. 016208, 2000, arXiv:0006007 [nlin.CD].

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[35] A. Lakshminarayan, N. R. Cerruti, and S. Tomsovic, "Classical diffusion and quantum level velocities: Systematic deviations from random matrix theory," *Phys. Rev. E*, vol. 60, pp. 3992–3999, 1999, arXiv:9906009 [chao-dyn]; erratum: *Phys. Rev. E* **61**, 6031 (2000).

[36] E. E. Narimanov, N. R. Cerruti, H. U. Baranger, and S. Tomsovic, "Chaos in quantum dots: Dynamical modulation of coulomb blockade peak heights," *Phys. Rev. Lett.*, vol. 83, pp. 2640–2643, 1999, figs. 1 & 3 reproduced in Harayama and Nakamura, "Quantum Chaos and Quantum Dots", Oxford UP (UK); arXiv:9812165 [cond-mat].

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[38] S. Tomsovic and J. H. Lefebvre, "Can wave packet revivals occur in chaotic quantum systems?" *Phys. Rev. Lett.*, vol. 79, pp. 3629–3632, 1997.

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[41] S. Tomsovic, M. Grinberg, and D. Ullmo, "Semiclassical trace formulae of near-integrable systems: Resonances," *Phys. Rev. Lett.*, vol. 75, pp. 4346–4349, 1995, over 50 citations.

[42] S. Tomsovic and D. Ullmo, "Chaos-assisted tunneling," *Phys. Rev. E*, vol. 50, pp. 145–162, 1994, over 125 citations.

[43] I. M. S. Barnes, M. Nauenberg, M. Nockleby, and S. Tomsovic, "Classical orbits and semiclassical wave packet propagation in the coulomb potential," *J. Phys. A: Math. Gen.*, vol. 27, pp. 3299–3321, 1994.

[44] ——, "Semiclassical theory of quantum propagation: The coulomb potential," *Phys. Rev. Lett.*, vol. 71, pp. 1961–1964, 1993.

[45] E. J. Heller and S. Tomsovic, "Post-modern quantum mechanics," *Physics Today*, vol. 46, no. 7, pp. 38–46, 1993, over 145 citations; reprinted in "Parity", Vol. 12 (8), (1993); Figures 1 & 6 reproduced in "Semiclassical Physics", Brack and Bhaduri, Addison-Wesley, (1997, USA).

[46] S. Tomsovic and E. J. Heller, "The semiclassical construction of chaotic eigenstates," *Phys. Rev. Lett.*, vol. 70, pp. 1405–1408, 1993, over 50 citations.

[47] O. Bohigas, S. Tomsovic, and D. Ullmo, "Manifestations of classical phase space structures in quantum mechanics," *Phys. Rep.*, vol. 223, no. 2, pp. 43–133, 1993, over 325 citations; Figures 16.12-15 in M. L. Mehta, "Random Matrices", Academic Press, (1991, San Diego) reproduced from this work.

[48] S. Tomsovic and E. J. Heller, "The long-time semiclassical dynamics of chaos: the stadium billiard," *Phys. Rev. E*, vol. 47, pp. 282–299, 1993, over 150 citations.

[49] P. A. Mello and S. Tomsovic, "Scattering approach to quantum electronic transport," *Phys. Rev. B*, vol. 46, pp. 15 963 – 15 981, 1992.

[50] M.-A. Sepúlveda, S. Tomsovic, and E. J. Heller, "Semiclassical propagation: how long can it last," *Phys. Rev. Lett.*, vol. 69, pp. 402–405, 1992, over 100 citations.

[51] P. W. O'Connor, S. Tomsovic, and E. J. Heller, "Accuracy of semiclassical dynamics in the presence of chaos," *J. Stat. Phys.*, vol. 68, pp. 131 – 152, 1992.

[52] U. Smilansky, S. Tomsovic, and O. Bohigas, "Spectral flucuations and transport in phase space," *J. Phys. A: Math. Gen.*, vol. 25, pp. 3261–3273, 1992.

[53] P. W. O'Connor, S. Tomsovic, and E. J. Heller, "Semiclassical dynamics in the strongly chaotic regime - breaking the log-time barrier," *Physica D*, vol. 55, pp. 340–357, 1992, over 70 citations.

[54] E. J. Heller, S. Tomsovic, and M.-A. Sepúlveda, "Time domain approach to semiclassical dynamics: Breaking the log time barrier," *Chaos*, vol. 2, pp. 105 – 115, 1992.

[55] S. Tomsovic, "The level density of a special quartic oscillator," *J. Phys. A: Math. Gen.*, vol. 24, pp. L733–L736, 1991.

[56] S. Tomsovic and E. J. Heller, "Semiclassical dynamics of chaotic motion: Unexpected long time accuracy," *Phys. Rev. Lett.*, vol. 67, pp. 664–667, 1991, over 160 citations.

[57] P. A. Mello and S. Tomsovic, "The scattering approach to quantum transport: Toward a consistent physical picture," *Phys. Rev. Lett.*, vol. 67, pp. 342 – 345, 1991.

[58] P. W. O'Connor and S. Tomsovic, "The unusual nature of the quantum baker's transformation," *Ann. Phys. (NY)*, vol. 207, pp. 218 – 264, 1991.

[59] O. Bohigas, S. Tomsovic, and D. Ullmo, "Classical transport effects on chaotic levels," *Phys. Rev. Lett.*, vol. 65, no. 1, pp. 5–8, Jul 1990, over 50 citations.

[60] ——, "Dynamical quasidegeneracies and separation of regular and irregular quantum levels," *Phys. Rev. Lett.*, vol. 64, no. 13, pp. 1479 –1482, Mar 1990, over 50 citations.

[61] O. Bohigas, M.-J. Giannoni, C. Schmit, S. Tomsovic, and D. Ullmo, "Strongly chaotic and mixed systems: Some classical and quantum properties," *Comments At. Mol. Phys.*, vol. 25, p. 31, 1990.

[62] J. B. French, V. K. B. Kota, A. Pandey, and S. Tomsovic, "Statistical properties of many particle spectra vi: fluctuation bounds on n-n t-noninvariance," *Ann. Phys.*, vol. 181, pp. 235–260, 1988, over 70 citations.

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