

Arthur La Porta

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EDUCATION

Ph.D. in physics, University of California, San Diego (1996).

Thesis title : Pattern Dynamics and Spatiotemporal Disorder in Traveling-wave Convection

Thesis advisor: Clifford M. Surko

B.A. in physics, Columbia College, Columbia University, (1984).

PROFESSIONAL

Assistant Professor, September 2006, Department of Physics and Institute of Physical Science and Technology, University of Maryland, College Park.

Research Associate, January 2005–present, Department of Biological Sciences, Stanford University. Steven M. Block, advisor.

Research Associate, 2001–2004, Laboratory of Atomic and Solid State Physics Cornell University. Michelle D. Wang, advisor.

Post-Doctoral Researcher, 1997–2001, Laboratory of Atomic and Solid State Physics Cornell University. Eberhard Bodenschatz, advisor.

Doctoral Candidate, 1992–1996, Post-Doctoral Researcher, 1996–1997, Department of Physics, University of California, San Diego. Thesis research in experimental physics. Clifford M. Surko, advisor.

Teaching Assistant, 1991–1992, Department of Physics, University of California, San Diego. Coordinator of introductory physics lecture course.

Member Technical Staff, 1986–1991, Department of Optical Physics, AT&T Bell Laboratories. Research and technical support in nonlinear optics, photonics and biophysics.

PUBLICATIONS

Kristina Herbert, Arthur La Porta, Becky J. Wong, Rachel A. Mooney, Keir C. Neuman, Robert Landick, Steven M. Block, *Sequence-resolved Detection of Pausing by Single RNA Polymerase Molecules on Periodic Templates Reveals an Elemental Pause State*, Cell 125, p. 1083 (2006).

Arthur La Porta and Michelle D. Wang, *Optical Torque Wrench: Angular Trapping, Rotation and Torque Detection of Quartz Microparticles*, Physical Review Letters **92**, 190801 (2004).

Arthur La Porta and David Kleinfeld, *Interferometric detection of action potentials in vitro*, in Imaging in Neuroscience and Development: A Laboratory Manual (R. Yuste and A. Konnerth, editors), 2003, Cold Spring Harbor Laboratory Press, NY, in press.

Karen Adelman, Julia Yuzenkova, Arthur La Porta, Nikolay Zenkin, Jookyung Lee, John T. Lis, Sergei Borukhov, Michelle D. Wang and Konstantin Severinov, *Molecular Mechanism of Transcription Inhibition by Peptide Antibiotic Microcin J25*, Molecular Cell, **14** p. 753 (2004).

David Kleinfeld and Arthur La Porta, *Detection of Action Potentials in Vitro by Changes in Refractive Index*, In *Light Scattering Imaging of Neural Tissue Function* (D. M. Rector and J. S. George, editors), 2003, Humana Press, in press.

Karen Adelman, Arthur La Porta, Thomas J. Santangelo, John T. Lis, Jeffery W. Roberts and Michelle D. Wang, *Single Molecule Analysis of RNA Polymerase Elongation Reveals Uniform Kinetic Behavior*, PNAS **99** p. 13538-13543 (October 15, 2002).

Arthur La Porta, Greg A. Voth, Alice M. Crawford, Jim Alexander and Eberhard Bodenschatz, *Fluid Particle Accelerations in Fully Developed Turbulence*, Nature **409** p. 1017–1019 (February 22, 2001).

Greg A. Voth, Arthur La Porta, Alice M. Crawford, Jim Alexander and Eberhard Bodenschatz, *Measurement of Fluid Particle Accelerations in Fully Developed Turbulence*, Journal of Fluid Mechanics **469** p. 121–160 (2002).

Arthur La Porta, Greg A. Voth, F. Moisy and Eberhard Bodenschatz, *Using Cavitation to Measure Statistics of Low-Pressure Events in Large-Reynolds-Number Turbulence*, Physics of Fluids **12** p. 1485–1496 (2000).

Arthur La Porta and C. M. Surko, *Predicting the Motion of Phase Defects in a Traveling-Wave Convection Pattern*, Physica D, **139** p. 177–185 (2000).

Arthur La Porta and C. M. Surko, *Quantitative Characterization of 2D Traveling-Wave Patterns*, Physica D, **123** p. 21 (1998).

Arthur La Porta and C. M. Surko, *Convective Instability in a Fluid Mixture Heated from Above*, Physical Review Letters **80** p. 3759 (1998).

Arthur La Porta and C. M. Surko, *Phase Defects and Spatiotemporal Disorder in Travelingwave Convection Patterns*, Physical Review E **56** p. 5351 (1997).

Arthur La Porta and C. M. Surko, *Reflection of Nonlinear Waves from a Domain Boundary*, Physical Review E Rapid Communications, **55** p. R6327 (1997).

Arthur La Porta and C. M. Surko, *Phase Defects as a Measure of Disorder in Traveling-Wave Convection*, Physical Review Letters **77** p. 2678 (1996).

Arthur La Porta, K. D. Eaton and C. M. Surko, *Transition from Curved to Angular Texture in Binary Fluid Convection*, Physical Review **E53**, p. 570 (1996).

Arthur La Porta and C. M. Surko, *Dynamics of 2D Traveling-wave Convection Patterns*, Physical Review **E53**, p. 5916 (1996).

R. P. Barber, L. M. Merchant, A. La Porta, R. C. Dynes, *Tunneling into Granular Pb Films in the Superconducting and Insulating Regimes*, Physical Review **B49**, p. 3409 (1994).

Arthur La Porta and R. E. Slusher, *Squeezing Limits at High Parametric Gain*, Physical Review **A44**, p. 2013 (1991).

R. A. Stepanoski, Arthur La Porta, F. Raccuia-Behling, G. E. Blonder, R. E. Slusher and D. Kleinfeld, *Noninvasive Detection of Changes in Membrane Potential in Cultured Neurons by Light Scattering*. Proceedings of the National Academy of Science **88**, p. 9382 (1991).

Arthur La Porta, R. E. Slusher and B. Yurke, *Back-Action Evading Measurements of an Optical Field Using Parametric Down Conversion*, Physical Review Letters, **62**, p. 28 (1989).

R. E. Slusher, P. Grangier, A. La Porta, B. Yurke and M. J. Potasek, *Pulsed Squeezed Light*, Physical Review Letters, **59**, p. 2566 (1987).

P. Grangier, R. E. Slusher, R. E., B. Yurke and A. La Porta, *Squeezed Light Enhanced Polarization Interferometer*, Physical Review Letters, **59**, p. 2153 (1987).

R. E. Slusher, B. Yurke, P. Grangier, A. La Porta, D. F. Walls and M. Reid, *Squeezed-Light Generation by Four-Wave Mixing Near An Atomic Resonance*, Journal of the Optical Society of America B, **4** p. 1454 (1987).

PROFESSIONAL ASSOCIATIONS

Member, Biophysical Society, America Physical Society.

Referee, Nature, Physical Review Letters, Physical Review E, Experiments in Fluids.

HONORS

UCSD Department of Physics Regents Fellowship (1991-1992)

AT&T Individual Performance Award (1991)

Elected Phi Beta Kappa, Columbia College (1984)

Magna cum Laude, Columbia College (1984)