

Dr. Eugeny E. Mikhailov

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Education

Ph.D. in Physics (specialities in Atomic physics and Quantum optics), 1998–2003

Dissertation: Nonlinear properties of dense coherent media
Physics Department, Texas A&M University

Diploma in Physics (speciality in Quantum electronics), 1992–1998

Moscow State Engineering Physics Institute

Employment History

Adjunct Assistant Professor

Department of Physics, College of William & Mary
2006–Present

Study of novel source of squeezed vacuum.

Compact atomic clock prototype.

Supervision of students at different levels.

Postdoctoral Associate

Kavli Institute for Astrophysics and Space Research / LIGO Laboratory, Massachusetts Institute of Technology
2003–2006

Development of stable low frequency source of squeezed light (NSF co-sponsored project PHY-0107417 and PHY-0300345).

Collaboration with Quantum Optics group in Australian National University.

Teaching/Research assistant

Physics Department, Texas A&M University
1998–2003

Study of nonlinear properties of dense coherent media. Measurements with slow and fast light. Laser spectroscopy. Conducting recitation and labs for undergraduate students, assistance with graduate level classes.

Research assistant

Frequency Standard Laboratory, Lebedev Physics Institute, Moscow, Russia
1997–1998

Study of laser driven cascade pumping scheme in alkali atoms. Laser spectroscopy.

Awards

- **Texas Sections of the APS student travel award**, 2002
- **Division of Laser Science of the APS travel award**, 2002

Publications

- Eugeny E. Mikhailov, Irina Novikova, "Low-frequency vacuum squeezing via polarization self-rotation in Rb vapor", *Optics Letters*, Issue 11, **33**, 1213-1215, (2008).
- Keisuke Goda, Osamu Miyakawa, Eugeny E. Mikhailov, Shailendhar Saraf, Rana Adhikari, Kirk McKenzie, Robert Ward, Stephen Vass, Alan Weinstein, Nergis Mavalvala, "A quantum-enhanced prototype gravitational-wave detector", *Nature Physics*, **4**, 472-476, (2008).
- Keisuke Goda, Eugeny E. Mikhailov, Osamu Miyakawa, Shailendhar Saraf, Stephen Vass, Alan Weinstein, Nergis Mavalvala, "Generation of a stable low-frequency squeezed vacuum field with periodically poled KTiOPO₄ at 1064 nm", *Optics Letters*, Issue 2, **33**, 92-94, (2008).
- B. Abbott, et al. "Search for gravitational waves associated with 39 gamma-ray bursts using data from the second, third, and fourth LIGO runs", *Physical Review D*, **77**, e062004, (2008).
- B. Abbott, et al. "Search for gravitational waves from binary inspirals in S3 and S4 LIGO data", *Physical Review D*, **77**, e062002, (2008).
- B. Abbott, et al. "All-sky search for periodic gravitational waves in LIGO S4 data", *Physical Review D*, **77**, e022001, (2008).

- Kentaro Somiya, Yanbei Chen, Keisuke Goda, Eugeny E. Mikhailov, "Utility investigation of artificial time delay in displacement-noise-free interferometers", *Physical Review D*, **76**, e022002, (2007).
- B. Abbott, et al. "Upper limit map of a background of gravitational waves", *Physical Review D*, **76**, e082003, (2007).
- B. Abbott, et al. "Searches for periodic gravitational waves from unknown isolated sources and Scorpius X-1: Results from the second LIGO science run", *Physical Review D*, **76**, e082001, (2007).
- B. Abbott, et al. "Search for gravitational wave radiation associated with the pulsating tail of the SGR 1806-20 hyperflare of 27 December 2004 using LIGO", *Physical Review D*, **76**, e062003, (2007).
- B. Abbott, et al. "Upper limits on gravitational wave emission from 78 radio pulsars", *Physical Review D*, **76**, e042001, (2007).
- B. Abbott, et al. "First cross-correlation analysis of interferometric and resonant-bar gravitational-wave data for stochastic backgrounds", *Physical Review D*, **76**, e022001, (2007).
- Yanbei Chen, Archana Pai, Kentaro Somiya, Seiji Kawamura, Shuichi Sato, Keiko Kokeyama, Robert L. Ward, Keisuke Goda, Eugeny E. Mikhailov, "Interferometers for Displacement-Noise-Free Gravitational-Wave Detection", *Physical Review Lett.*, **97**, 151103, (2006).
- Eugeny E. Mikhailov, Keisuke Goda, Nergis Mavalvala, "Noninvasive measurements of cavity parameters by use of squeezed vacuum", *Physical Review A*, **74**, 033817, (2006).
- Eugeny E. Mikhailov, V. Sautenkov, Y. Rostovtsev, Aihua Zhang, M. Suhail Zubairy, Marlan O. Scully, G. Welch, "Spectral narrowing via quantum coherence", *Physical Review A*, **74**, 013807, (2006).
- Eugeny E. Mikhailov, Keisuke Goda, Thomas Corbitt, Nergis Mavalvala, "Frequency-dependent squeeze-amplitude attenuation and squeeze-angle rotation by electromagnetically induced transparency for gravitational-wave interferometers", *Physical Review A*, **73**, 053810, (2006).
- B. Abbott, et al. "Joint LIGO and TAMA300 search for gravitational waves from inspiralling neutron star binaries", *Physical Review D*, **73**, 102002, (2006).
- B. Abbott, et al. "Search for gravitational waves from binary black hole inspirals in LIGO data", *Physical Review D*, **73**, 062001, (2006).
- B. Abbott, et al. "Upper Limits on a Stochastic Background of Gravitational Waves", *Phys. Rev. Lett.*, **95**, 221101, (2005).
- B. Abbott, et al. "Upper limits from the LIGO and TAMA detectors on the rate of gravitational-wave bursts", *Physical Review D*, **72**, 122004, (2005).
- B. Abbott, et al. "First all-sky upper limits from LIGO on the strength of periodic gravitational waves using the Hough transform", *Physical Review D*, **72**, 102004, (2005).
- B. Abbott, et al. "Upper limits on gravitational wave bursts in LIGOs second science run", *Physical Review D*, **72**, 062001, (2005).
- Kirk McKenzie, Eugeny E. Mikhailov, Keisuke Goda, Ping Koy Lam, Nicolai Grosse, Malcolm B. Gray, Nergis Mavalvala, David McClelland, "Quantum noise locking", *J. Opt. B: Quantum Semiclass. Opt.*, **7**, S421, (2005).
- Keisuke Goda, Kirk McKenzie, Eugeny E. Mikhailov, Ping Koy Lam, David McClelland, Nergis Mavalvala, "Photothermal fluctuations as a fundamental limit to low-frequency squeezing in a degenerate optical parametric oscillator", *Physical Review A*, **70**, 043819, (2005).
- Eugeny E. Mikhailov, I. Novikova, Y. Rostovtsev, G. Welch, "Buffer-gas-induced absorption resonances in Rb vapor", *Physical Review A*, **70**, 033806, (2004).
- Eugeny E. Mikhailov, V. Sautenkov, I. Novikova, G. Welch, "Large negative and positive delay of optical pulses in coherently prepared dense Rb vapor with buffer gas", *Physical Review A*, **69**, 063808, (2004).
- Eugeny E. Mikhailov, V. Sautenkov, Y. Rostovtsev, G. Welch, "Absorption resonance and large negative delay in rubidium vapor with a buffer gas", *JOSA B, Issue 2*, **21**, 425, (2004).
- Eugeny E. Mikhailov, Y. Rostovtsev, G. Welch, "Group velocity study in hot ⁸⁷Rb vapour with buffer gas", *Journal of Modern Optics*, **50**, 2645-2654, (2003).
- Eugeny E. Mikhailov, Y. Rostovtsev, G. Welch, "Experimental study of Stokes fields linewidth in resonant four-wave mixing in hot Rb vapour", *Journal of Modern Optics*, **49**, 2535-2542, (2002).
- V. Sautenkov, M. D. Lukin, C. J. Bednar, I. Novikova, Eugeny E. Mikhailov, M. Fleischhauer, V. L. Velichansky, G. Welch, M. O. Scully, "Enhancement of magneto-optic effects via large atomic coherence in optically dense media", *Physical Review A*, **62**, 023810, (2000).
- A.V. Milkov, R. Sassen, I. Novikova, Eugeny E. Mikhailov, "Gas hydrate stability at minimum water depth in the Gulf of Mexico: Significance to geohazard assessment", *Gulf Coast Association of Geological Societies Transactions*, **50**, 217-224, (2000).

Publications (non-refereed)

- Kentaro Somiya, Yanbei Chen, Keisuke Goda, Eugeny E. Mikhailov, "Isolation of gravitational waves from displacement noise and utility of a time-delay device", *J. Phys.: Conf. Ser.*, **66**, 012053, (2007).