

## JOURNAL PUBLICATIONS

J. Jeon, R. Maram, J. van Howe and J. Azaña, "Programmable Passive Waveform Amplifier based on the Temporal Talbot Effect," *Opt. Exp.*, Vol 26, No. 6, pp. 6872-6879, 2018.

R. Maram, M. Seghilani, J. Jeon, X. Li, J. van Howe, L.R. Cortés and J. Azaña, "Demonstration of input-to-output gain and temporal noise mitigation in a Talbot amplifier," *IEEE Photon. Technol. Lett.*, Vol. 30, No. 8, pp. 665-668, 2018.

\*R. Maram, J. van Howe, L.R. Cortés and J. Azaña "Energy-preserving repetition rate control of periodic pulse trains using temporal Talbot effects," *J. of Lightwave Tech.*, Vol. 35, No. 4, pp. 1-11, 2017.

R. Maram, J. van Howe, M. Li and J. Azaña, "Lossless Fractional Repetition-Rate Multiplication of Optical Pulse Trains," *Opt. Lett.*, Vol. 40, No. 5, pp. 375-377, 2015.

R. Maram, J. van Howe, M. Li and J. Azaña, "Passive, Noiseless, Intensity Amplification of Repetitive Signals," *Nat. Comm.*, Vol. 5, Article No. 5163, 2014.

M. Durst and J. van Howe, "All-fiber, Wavelength and Repetition-Rate Tunable, Ultrafast Pulse Generation in the 2.0 micron Region Without Mode-locking," *J. of Lightwave Tech.*, Vol. 31, No. 23, pp. 3714-3718, 2013.

\*J. H. Lee, J. van Howe, C. Xu and X. Liu, "Soliton Self-Frequency Shift: Experimental Demonstrations and Applications," *J. Sel. Topics in Quantum Elec.*, Vol. 14, No. 3, pp. 713-723, 2008.

J. van Howe, J. Lee and C. Xu, "Generation of 3.5 nJ femtosecond pulses from a CW laser without mode-locking," *Opt. Lett.*, Vol. 32, No. 11, pp. 1408-1410, 2007.

J. van Howe, J. Lee, S. Zhou, F. Wise, C. Xu, S. Ramachandran, S. Ghalmi and M. F. Yan, "Demonstration of soliton self-frequency shift below 1300 nm in higher-order-mode, solid silica-based fiber," *Opt. Lett.*, Vol. 32, No. 4, 340-342, 2007.

\*J. van Howe and C. Xu, "Ultrafast optical signal processing based upon space-time dualities," *J. of Lightwave Tech.*, Vol. 24, No. 7, pp. 2649-2662, 2006.

J. van Howe, G. Zhu and C. Xu, "Compensation of self-phase modulation in fiber-based chirped-pulse amplification systems," *Opt. Lett.*, Vol. 31, No. 11, pp. 1756-1758, 2006.

J. E. Sharping, Y. Okawachi, J. van Howe, C. Xu, Y. Wang, A. E. Willner and A. L. Gaeta, "All-optical, wavelength and bandwidth preserving, pulse delay based on parametric wavelength conversion and dispersion," *Opt. Exp.*, Vol. 13, No. 20, pp. 7872-7877, 2005.

G. Zhu, J. van Howe, M. Durst, W. Zipfel, and C. Xu, "Simultaneous spatial and temporal focusing of femtosecond pulses," *Opt. Exp.*, Vol. 13, No. 6, pp. 2153-2159, 2005.

J. van Howe and C. Xu, "Ultrafast optical delay line using soliton propagation between a time-prism pair," *Opt. Exp.*, Vol. 13, No. 4, pp. 1138-1143, 2005.

J. Hansryd, J. van Howe and C. Xu, "Experimental demonstration of nonlinear phase jitter compensation in DPSK modulated fiber links," *IEEE Photon. Technol. Lett.*, Vol. 17, No. 1, pp. 232-234, 2005.

J. van Howe and C. Xu, "Ultrafast optical delay line using a time-prism pair," *Opt. Lett.*, Vol. 30, No. 1, pp. 99-101, 2005.

J. van Howe, J. Hansryd and C. Xu, "Multiwavelength pulse generator using time-lens compression," *Opt. Lett.*, Vol. 29, No. 13, pp. 1470-1472, 2004.

J. Hansryd, J. van Howe, and C. Xu, "Nonlinear crosstalk and compensation in QDPASK communication systems," *IEEE Photon. Technol. Lett.*, Vol. 16, No. 8, pp. 1975-1977, 2004.

## CONFERENCE PROCEEDINGS

J. Jeon, R. Maram, J. van Howe and J. Azaña, "Programmable sub-harmonic optical clock recovery based on dispersion-induced inverse temporal self-imaging" Conference on Lasers and Electro-Optics, 2017, San Jose, CA, May 13-18, 2018.

J. Jeon, R. Maram, J. van Howe and J. Azaña, "Programmable passive waveform amplifier based on temporal self-imaging effects" Conference on Lasers and Electro-Optics, 2017, San Jose, CA, May 14-19, 2017.

R. Maram, J. van Howe, and J. Azaña, "Demonstration of Input-to-Output Gain in a Talbot Amplifier" IEEE Photonics Conference, 2015, Reston, VA, Oct. 4-8, 2015.

\*J. Azaña, R. Maram, J. van Howe, and M. Li and "Passive Amplification of and Real-time Averaging of Repetitive Waveforms using Talbot Effects" European Conference on Lasers and Electro-Optics, 2015, Munich, Germany, June 21-25, 2015.

R. Maram, J. van Howe, and J. Azaña, "Noise-Eating Amplifier for Repetitive Signals" IEEE Photonics Conference, 2014, San Diego, CA, Oct. 12-16, 2014.

R. Maram, J. van Howe, M. Li and J. Azaña, "Passive Waveform Amplification by Self-Imaging" Conference on Lasers and Electro-Optics, 2014, San Jose, CA, June 8-13, 2014.

J. van Howe, "All-fiber 10-GHz Picosecond-Pulse Generation at 1.9  $\mu\text{m}$  without Mode-locking" Conference on Lasers and Electro-Optics, 2012, San Jose, May 6-11, 2012.

J. H. Lee (presenter), J. van Howe, C. Xu, S. Ramachandran and S. Ghalmi "Energetic Soliton Self-frequency Shift over a 240 nm in a Solid Silica-based Fiber," Postdeadline Session, Optical Fiber Communication Conference, 2007, Anaheim, CA, March 25-30, 2007.

J. H. Lee (presenter), J. van Howe, C. Xu, S. Ramachandran, S. Ghalmi and M. F. Yan "Generation of femtosecond pulses at 1350 nm by Cerenkov radiation in higher-order-mode fiber," Optical Fiber Communication Conference, 2007, Anaheim, CA, March 25-30, 2007.

J. van Howe (presenter) and C. Xu, "Looped Time-Lens Compression for Generation of 3.5 nJ Femtosecond Pulses from a CW Laser," Conference on Lasers and Electro-Optics, 2007, Baltimore, May 6-11, 2007.

\*J. van Howe (presenter), J. Lee, S. Zhou, F. Wise, C. Xu, S. Ramachandran, S. Ghalmi and M. F. Yan, "Soliton self-frequency shift below 1300 nm in higher-order-mode, solid silica-based fiber," LEOS Annual 2006, Montreal, October 29-November 2, 2006.

J. van Howe (presenter) and C. Xu, "Applications of telecom technologies to optical instrumentation," Proceedings from the SPIE, Optics East, 2006, Vol. 6388, Boston, October 1-4, 2006.

J. van Howe (presenter), and C. Xu, "Compensation of self-phase Modulation in Fiber-Based Chirped-Pulse Amplification Systems," Conference on Lasers and Electro-Optics, 2006, Long Beach, May 21-26, 2006.

\*J. van Howe and C. Xu (presenter), "Applications of temporal imaging in optical signal processing," Digest of the LEOS Summer Topical Meetings, 2005, pp. 211-212, San Diego, July 25-27, 2005.

G. Zhu, J. van Howe, M. Durst, W. Zipfel and C. Xu (presenter), "Simultaneous spatial and temporal focusing of femtosecond pulses," Conference on Lasers and Electro-Optics, 2005, Vol. 2, pp. 1506-1508, Baltimore, May 22-27, 2005.

J. E. Sharping (presenter), Y. Okawachi, J. van Howe, C. Xu, Y. Wang, A. E. Willner and A. L. Gaeta, "All-optical, continuously tunable, nanosecond pulse delay using wavelength conversion and fiber dispersion," Conference on Lasers and Electro-Optics, 2005, Vol. 2, pp. 971-973, Baltimore, May 22-27, 2005.

J. van Howe (presenter) and C. Xu, "Ultrafast optical delay line using soliton propagation between a time-prism pair," Technical Digest of the Optical Fiber Communication Conference, 2005, Vol. 5, Anaheim, CA, March 6-11, 2005.

J. van Howe (presenter) and C. Xu, "0.5 GHz scanning rate optical delay line," OSA annual meeting Frontiers in Optics, 2004, Rochester, NY, October 10-14, 2004.

J. van Howe (presenter) J. Hansryd, and C. Xu, "Novel multi-wavelength pulse generator for real-time WDM optical sampling," Conference on Lasers and Electro-Optics, 2004, Vol. 2, San Francisco, May 16-21, 2004.

J. Hansryd, J. van Howe (presenter) and C. Xu, "Compensation of nonlinear phase jitter in DPSK modulated optical communications systems," Conference on Lasers and Electro-Optics, 2004, Vol. 2, San Francisco, May 16-21, 2004.

\* Indicates invited paper or presentation

## **INVITED COLLOQUIA**

"Optics in Space and Time" : Middlebury College, Spring 2019; "Ultrafast Optical Signal Processing using Space-Time Duality": University of Iowa, Optical Science and Technology Center, Spring 2016; Saint Ambrose University, Davenport, Iowa, Spring 2016; Western Illinois University, Macomb, IL, Spring 2015.

## **PATENTS**

“Production of Optical Pulses at a Desired Wavelength by Soliton Self-frequency Shift,” C. Xu and J. van Howe, **US 8,556,824 B2**, Issued October 15, 2013.

“Production of Optical Pulses at a Desired Wavelength using Soliton Self-Frequency Shift in Higher-Order-Mode Fiber,” C. Xu and J. van Howe, **US 8,554,035 B2**, Issued October 8, 2013.

“Methods and Systems for Compensation of Self-Phase Modulation in Fiber-Based Amplification Systems,” C. Xu, J. van Howe and G. Zhu, **US 8,102,594 B2**, Issued January 24, 2012.