

## JUN YE

### Current position

Fellow, National Institute of Standards and Technology, U.S. Dept. of Commerce  
Fellow of JILA and Professor Adjoint, JILA and Dept. of Physics, University of Colorado,  
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### Education

Ph.D. Physics, University of Colorado, 1997; M.S. Physics, University of New Mexico, 1991;  
B.S. Applied Physics, Jiao Tong University, Shanghai, 1989

### Honors and Awards

Elected member, National Academy of Sciences (US), 2011  
Frew Fellow, Australian Academy of Science, 2011  
European Frequency and Time Forum (EFTF) Award, 2009  
Gordon and Betty Moore Distinguished Scholar, California Institute of Technology, 2008  
I. I. Rabi Prize, American Physical Society (APS), 2007  
Carl Zeiss Research Award, Germany, 2007  
William F. Meggers Award, Optical Society of America (OSA), 2006  
Samuel Wesley Stratton Award, National Institute of Standards and Technology, 2006  
Friedrich Wilhelm Bessel Research Award, Alexander von Humboldt Foundation, Germany, 2006  
Elected Fellow, Optical Society of America, 2006  
The First Prize in Technological Innovations, Amazing Light: Vision for Discovery Symposium in  
Honor of Charles H. Townes, 2005  
Elected Fellow, American Physical Society, 2005  
Arthur S. Flemming Award (Scientific Category, US Federal Government), 2005  
Fellow, National Institute of Standards and Technology, U.S. Department of Commerce, 2004  
Marquis 58th Edition of Who's Who in America, 2003  
Presidential Early Career Award for Scientists and Engineers, 2003  
Technology Review Magazine's TR100 Young Innovator, 2002  
Gold Medal (Group), U.S. Department of Commerce, 2001  
Frontiers of Engineering Symposium, National Academy of Engineering, 2000  
Adolph Lomb Medal, Optical Society of America (OSA), 1999  
R. A. Millikan Prize Fellowship, California Institute of Technology, 1997 – 1999  
University Fellowship, University of Colorado at Boulder, 1993 – 1994  
Honor Graduate, Jiao Tong University, Shanghai, 1989  
Silver-Light Prize (Exceptional Undergraduate Award), Jiao Tong University, Shanghai, 1987

### Named Lectures and Guest Professorships

Niels Bohr Lecture, Niels Bohr Institute, University of Copenhagen, Denmark, 2009  
R. B. Woodward Lecture in Chemical Sciences/Physical Chemistry, Harvard University, 2009  
Henri Sack Memorial Lecture, Cornell University, 2007  
Optical Society of America (OSA) Traveling Lecturer, 2006 – present  
Guest Professors, Shanghai JiaoTong Univ., East China Normal Univ., Shanghai, 2006 – present  
Guest Professor, Institut für Experimentalphysik, Universität Innsbruck, Austria, 2004

### Employment

National Institute of Standards and Technology: Physicist (1999 – 2004), Fellow (since 2004)  
JILA, NIST and University of Colorado: Associate Fellow (1999 – 2001), Fellow (since 2001)

Department of Physics, University of Colorado: Assistant Professor Adjoint (1999 – 2003), Associate Professor Adjoint (2004 – 2006), Professor Adjoint (since 2006)  
California Institute of Technology: R. A. Millikan Post-doctoral fellow (1997 – 1999)  
University of Colorado: Research Assistant (1992 – 1997)

### **Professional Affiliations and activities**

National Academy of Sciences (member), American Physical Society (APS, Fellow), Optical Society of America (OSA, Fellow)  
Co-Chair, Symposium on “Laser frequency stabilization, standards, measurement, and applications,” 2001 Photonics West – SPIE meeting  
Co-organizer – Special session on precision measurement, 2002 American Physical Society Division of Atomic, Molecular and Optical Physics (DAMOP) Annual Meeting  
Principle Investigator, “Optical atomic clock,” Multidisciplinary Research Program of the University Research Initiative (MURI), Office of Naval Research, 2003 – present  
Program Subcommittee member, Conference on Lasers and Electro-Optics (CLEO) 2004, 2005  
Co-organizer – 3rd and 4th workshop on Ultracold Group II Atoms: Theory and Applications, Institute for Theoretical Atomic, Molecular, and Optical Physics (ITAMP), Harvard, Cambridge.  
Program Subcommittee Chair, Conference on Lasers and Electro-Optics (CLEO) 2006, 2007  
Grand Challenges Committee, Basic Energy Sciences, US Dept. of Energy 2006-2007  
Thesis Prize Committee, DAMOP, American Physical Society, 2007, 2008  
Member, Executive Committee, DAMOP, American Physical Society, 2008, 2009  
International Steering Committee, Symposium of Frequency Standards and Metrology  
Rabi Prize Committee, American Physical Society, 2008 – 2009  
Advisory Committee, Center for Ultracold Atoms, MIT-Harvard, 2009 – present  
Organizing committee, “From Quantum to Cosmos”, 2006 – 2009  
Chair and Vice Chair, APS Group on Precision Measurement & Fundamental Constants, 2009-12  
Review panel members for NSF, NASA, DOE, etc., 2000 – present  
Co-organizer, Cold Molecules Summer Workshop, JILA – 2009  
Member, Scientific Advisory Board, Centre for Quantum Technologies, National Singapore Univ.

### **Publications and Presentations**

331 invited talks (Colloquia, Keynote Speeches, Invited Conference Talks, and Seminars)  
245 published papers in refereed journals, edited books, and proceedings  
7383 citations (ISI Web of Knowledge); H-index, 46; average citation, 41  
2 edited books; 2 edited conference proceedings and special issues  
137 regular conference contributions and papers  
4 U.S. Patents

### **Students and Post-Doctoral Scholars Advised**

*Post-doctoral Scholars* – M. Silva, W.Y. Cheng, T.H. Yoon, J.L. Peng, X.Y. Xu, D.J. Jones, T.H. Loftus, J.R. Bochinski, M. Notcutt, T. Ido, R.J. Jones, H.J. Lewandowski, K.D. Moll, B.L. Lev, T. Zelevinsky, T. Zanon, A. Pe’er, G. Campbell, T. Schibli, S. Ospelkaus, D.J. Wang, M. Swallows, F. Adler, A. Cingoz, P. Masłowski, A. Chotia, Y. Xia, M. Hummon, A. Foltynowicz-Matyba, T. Allison, J. Williams, T. Ban  
*Ph.D. Students* – A. Marian, L. Chen, K.W. Holman, E.R. Hudson, S.M. Foreman, A.D. Ludlow, M.M. Boyd, M.C. Stowe, M.J. Thorpe, B.C. Sawyer, S. Blatt, B.K. Stuhl, D. Yost, E.H. Yeo, M.J. Martin, M. Miranda, K. Cossel, T.L. Nicholson, M. Bishof, B. Bloom, S. Moses, C. Benko  
*Undergraduate students* – S. Bergquist, J. Ames, J. Jost, C. McCann, S. Blatt, B. Safdi, D. Balslev-Clausen, A. Tingle, K. Cox, T. Hirokawa

**Graduate Advisor** – Dr. J.L. Hall, NIST; **Postdoctoral Advisor** – Prof. H. J. Kimble, Caltech

#### **U.S. patents (4)**

1. J. L. Hall, S. A. Diddams, L.-S. Ma, and J. Ye, "Comb generating optical cavity that includes an optical amplifier and an optical modulator," U.S. Patent #6,201,638, March 13, 2001.
2. J. Ye and J. L. Hall, "A novel cavity ringdown heterodyne spectroscopy:  $1 \times 10^{-10}$  sensitivity with microwatt light power," U.S. Patent #6,727,492, April 27, 2004.
3. J. Ye, H. C. Kapteyn, J. L. Hall, R. K. Shelton, M. M. Murnane, and L.-S. Ma, "Multistage synchronization of pulsed radiation sources," U.S. Patent #6,831,935, December 14, 2004.
4. J. Ye, M. J. Thorpe, K. D. Moll, and R. J. Jones, "Frequency comb cavity enhanced spectroscopy," U.S. Patent #7,538,881, May 26, 2009.

**Publications** (Refereed journals and edited books):

**Jun Ye**

1. J. Ye, Q. Li, S. Peng, and Y. Chen, "Polarization rotation in optical fibers due to geometric path variance," *Appl. Opt.* **29**, 1724 (1990).
2. D. Emin, J. Ye, and C. Beckel, "Electron-correlation effects in one-dimensional large-bipolaron formation," *Phys. Rev. B* **46**, 10710 (1992).
3. J. Ye, H. Li, and J. G. McInerney, "Period-doubling route to chaos in semiconductor lasers," *Phys. Rev. A* **47**, 2249 (1993).
4. H. Li, J. Ye, and J. G. McInerney, "Detailed analysis of coherence collapse in semiconductor lasers," *IEEE J. of Quantum Electron.* **29**, 2421 (1993).
5. L.-S. Ma, P. Jungner, J. Ye, and J. L. Hall, "Delivering the same optical frequency at two places: Accurate cancellation of phase noise introduced by an optical fiber or other time-varying path," *Opt. Lett.* **19**, 1777 (1994).
6. P. Jungner, S. Swartz, M. Eickhoff, J. Ye, J. L. Hall, and S. Waltman, "Absolute frequency measurement of molecular iodine transitions near 532 nm," *IEEE Trans. Instrum. Meas.* **44**, 151 (1995).
7. L.-S. Ma, P. Jungner, J. Ye, and J. L. Hall, "Accurate cancellation (to mHz levels) of optical phase noise due to vibration or optical fiber insertion phase," in Laser Frequency Stabilization and Noise Reduction, Y. Shevy, Ed., SPIE **2378**, pp165 (1995).
8. P. Jungner, M. Eickhoff, S. Swartz, J. Ye, J. L. Hall, and S. Waltman, "Stability and absolute frequency of molecular iodine transitions near 532 nm," in Laser Frequency Stabilization and Noise Reduction, Y. Shevy, Ed., SPIE **2378**, p. 22 (1995). (Invited)
9. J. Ye, L.-S. Ma, and J. L. Hall, "Sub-Doppler optical frequency reference at 1.064  $\mu\text{m}$  via ultrasensitive cavity enhanced FM spectroscopy of  $\text{C}_2\text{HD}$  overtone transition," *Opt. Lett.* **21**, 1000 (1996).
10. J. Ye, S. Swartz, P. Jungner, and J. L. Hall, "Hyperfine structure and absolute frequency of the  $^{87}\text{Rb}$   $5\text{P}_{3/2}$  state," *Opt. Lett.* **21**, 1280 (1996).
11. L.-S. Ma, J. Ye, P. Dubé, and J. L. Hall, "A new modulation method for sensitive nonlinear spectroscopy - application to molecular overtones as visible frequency references," in Laser Spectroscopy XII, M. Inguscio, M. Allegrini, and A. Sasso, Eds., World Scientific, Singapore, p. 199 (1996). (Invited)
12. J. L. Hall, J. Ye, L.-S. Ma, S. Swartz, P. Jungner, and S. Waltman, "Optical frequency standards - some improvements, some measurements, and some dreams," in Fifth Symposium on Frequency Standards and Metrology, J. C. Bergquist Ed., World Scientific, Singapore, p. 267 (1996). (Invited)
13. P. Dubé, L.-S. Ma, J. Ye, P. Jungner, and J. L. Hall, "Thermally-induced self-locking by overtone absorption from acetylene gas in an external optical cavity," *J. Opt. Soc. Am. B* **13**, 2041 (1996).
14. J. Ye, L.-S. Ma, T. Day, and J. L. Hall, "Highly-selective TeraHertz optical frequency comb generator," *Opt. Lett.* **22**, 301 (1997).

15. J. Ye, L.-S. Ma, and J. L. Hall, "Ultrasensitive high resolution laser spectroscopy and its application to optical frequency standards," in 28th Annual Precise Time and Time Interval (PTTI) Applications and Planning meeting, Proceedings, L. A. Breakiron, Ed., US Naval Observatory, Washington D.C., p. 289 (1997). (Invited)
16. J. Ye, L.-S. Ma, and J. L. Hall, "Ultra-stable optical frequency reference at 1.064  $\mu\text{m}$  using a  $\text{C}_2\text{HD}$  molecular overtone transition," *IEEE Trans. Instrum. Meas.* **46**, 178 (1997).
17. J. Ye, L.-S. Ma, and J. L. Hall, "Ultrasensitive detections in atomic and molecular physics – demonstration in molecular overtone spectroscopy," *J. Opt. Soc. Am. B* **15**, 6 (1998).
18. J. L. Hall, J. Ye, L.-S. Ma, K. Vogel, and T. Dinneen, "Optical frequency standards: Progress and applications," in Laser Spectroscopy XIII, Z.-J. Wang, Z.-M. Zhang, and Y.-Z. Wang, Eds., World Scientific, Singapore, p. 75 (1998). (Invited)
19. J. Ye, L.-S. Ma, and J. L. Hall, "Ultrasensitive detection of weak resonances – application to optical frequency standards," in Laser Spectroscopy XIII, Z.-J. Wang, Z.-M. Zhang, and Y.-Z. Wang, Eds., World Scientific, Singapore, p. 81 (1998). (Invited)
20. J. Ye, L.-S. Ma, and J. L. Hall, "Cavity-enhanced frequency modulation spectroscopy: Advancing optical detection sensitivity and laser frequency stabilization," in Methods for Ultrasensitive Detection, B. L. Fearey, Ed., *SPIE* **3270**, p. 85 (1998).
21. F.-L. Hong, J. Ishikawa, T. H. Yoon, L.-S. Ma, J. Ye, and J. L. Hall, "A portable  $\text{I}_2$ -stabilized Nd:YAG laser for wavelength standards at 532 nm and 1064 nm," in Recent Developments in Optical Gauge Block Metrology, J. E. Decker and N. Brown, Eds., *SPIE* **3477**, p. 2 (1998).
22. C. J. Hood, T. W. Lynn, H. Mabuchi, M. S. Chapman, J. Ye, and H. J. Kimble, "Quantum information processing with Cavity QED," in Photonic Quantum Computing II, S. P. Hotaling and A. R. Pirich, Eds., *SPIE* **3385**, p. 95 (1998).
23. J. Ye, L.-S. Ma, and J. L. Hall, "Using FM methods with molecules in a high finesse cavity: A demonstrated path to  $< 10^{-12}$  absorption sensitivity," in Cavity-Ringdown Spectroscopy: an Ultratrace-Absorption Measurement Technique, K. W. Busch and M. A. Busch, Eds., American Chemical Society/Oxford University Press, Washington, DC., p. 233 (1999). (Invited)
24. J. Ye, C. J. Hood, T. W. Lynn, H. Mabuchi, D. Vernooy, and H. J. Kimble, "Measurement and control of single atom motions in the quantum regime," in Trapped Charged Particles and Fundamental Physics, AIP Proceedings **457**, D.H.E. Dubin and D. Schneider, Eds., American Institute of Physics, New York, p. 371 (1999). (Invited)
25. F.-L. Hong, J. Ishikawa, J. Yoda, J. Ye, L.-S. Ma, and J. L. Hall, "Frequency comparison of  $^{127}\text{I}_2$ -stabilized Nd:YAG lasers," *IEEE Trans. Instrum. Meas.* **48**, 532 (1999).
26. J. Ye, L. Robertsson, S. Picard, L.-S. Ma, and J. L. Hall, "Absolute frequency atlas of molecular  $\text{I}_2$  lines at 532 nm," *IEEE Trans. Instrum. Meas.* **48**, 544 (1999).
27. J. L. Hall, L.-S. Ma, M. Taubman, B. Tiemann, F.-L. Hong, O. Pfister, and J. Ye, "Stabilization and frequency measurement of the  $\text{I}_2$ -stabilized Nd:YAG laser," *IEEE Trans. Instrum. Meas.* **48**, 583 (1999).

28. J. Ye, D. W. Vernooy, and H. J. Kimble, "Real time tracking and trapping of single atoms in cavity QED," *Phys. Rev. Lett.* **83**, 4987 (1999).
29. J. Ye, C. J. Hood, T. Lynn, H. Mabuchi, D. Vernooy, and H. J. Kimble, "Quantum manipulation and measurement of single atoms in optical cavity QED," *IEEE Trans. Instrum. Meas.* **48**, 608 (1999).
30. H. Mabuchi, J. Ye, and H. J. Kimble, "Full observation of single-atom dynamics in cavity QED," *Appl. Phys. B* **68**, 1095 (1999).
31. S. A. Diddams, L.-S. Ma, J. Ye, and J. L. Hall, "Broadband optical comb generation with a frequency modulated parametric oscillator," in *Laser Spectroscopy XIV*, R. Blatt, J. Eschner, D. Leibfried, and F. Schmidt-Kaler, Eds., World Scientific, Singapore, p. 350 (1999).
32. H. J. Kimble, C. J. Hood, T. W. Lynn, H. Mabuchi, D. W. Vernooy, and J. Ye, "The Quantum Internet," in *Laser Spectroscopy XIV*, R. Blatt, J. Eschner, D. Leibfried, and F. Schmidt-Kaler, Eds., World Scientific, Singapore, p. 80 (1999). (Invited)
33. J. L. Hall, M. S. Taubman, S. A. Diddams, B. Tiemann, J. Ye, L.-S. Ma, D. Jones, and S. Cundiff, "Stabilizing and measuring optical frequencies," in *Laser Spectroscopy XIV*, R. Blatt, J. Eschner, D. Leibfried, and F. Schmidt-Kaler, Eds., World Scientific, Singapore, p. 51 (1999). (Invited)
34. L.-S. Ma, J. Ye, P. Dubé, and J. L. Hall, "Ultrasensitive frequency-modulation spectroscopy enhanced by a high-finesse optical cavity: theory and application to overtone transitions of  $C_2H_2$  and  $C_2HD$ ," *J. Opt. Soc. Am. B* **16**, 2255 (1999).
35. S. A. Diddams, L.-S. Ma, J. Ye, and J. L. Hall, "Broadband optical frequency comb generation with a phase modulated parametric oscillator," *Opt. Lett.* **24**, 1747 (1999).
36. J. Ye and J. L. Hall, "Optical phase locking in the MicroRadian domain: Potential applications to NASA spaceborne optical measurements," *Opt. Lett.* **24**, 1838 (1999).
37. C. W. Gardiner, J. Ye, H. C. Nägerl, and H. J. Kimble, "Evaluation of heating effects on atoms trapped in an optical trap," *Phys. Rev. A* **61**, 045801 (2000).
38. J. Ye and J. L. Hall, "Cavity ringdown heterodyne spectroscopy: High sensitivity with microwatt light power," *Phys. Rev. A* **61**, Rapid Communications, 061802(R) (2000).
39. J. L. Hall, M. S. Taubman, and J. Ye, "Laser stabilization," in *Handbook of Optics IV*, M. Bass, J. M. Enoch, E. Van Stryland, W. L. Wolfe, Eds., Optical Society of America, Washington D.C., Chapter 27, McGraw-Hill, New York (2000). (Invited)
40. J. Ye, L.-S. Ma, and J. L. Hall, "A new high-resolution frequency standard at 1030 nm for Yb:YAG solid state lasers," *J. Opt. Soc. Am. B* **17**, 927 (2000).
41. S. A. Diddams, D. J. Jones, J. Ye, S. T. Cundiff, J. L. Hall, J. K. Ranka, R. S. Windeler, R. Holzwarth, Th. Udem, and T. W. Hänsch, "Direct link between microwave and optical frequencies with a 300 THz femtosecond laser comb," *Phys. Rev. Lett.* **84**, 5102 (2000).
42. J. Ye, T. H. Yoon, J. L. Hall, A. A. Madej, J. E. Bernard, K. J. Siemsen, L. Marmet, J.-M. Chartier and A. Chartier, "Accuracy comparison of optical frequency measurement

- between harmonic-generation synthesis and a frequency division femtosecond-comb,” *Phys. Rev. Lett.* **85**, 3797 (2000).
43. J. L. Hall, J. Ye, and L.-S. Ma, “Measurement of mirror birefringence at the sub-ppm level: proposed application to a test of QED,” *Phys. Rev. A* **62**, No. 1, 013815 (2000).
  44. J. Ye, J. L. Hall and S. A. Diddams, “Precision phase control of ultrawide bandwidth fs laser – A network of ultrastable frequency marks across the visible spectrum,” *Opt. Lett.* **25**, 1675 (2000).
  45. S. A. Diddams, D. J. Jones, J. Ye, T.M. Fortier, R. S. Windeler, S. T. Cundiff, T. W. Hänsch, and J. L. Hall, “Optical frequency metrology and the phase control of femtosecond pulses--Towards the ultimate control of light,” *Optics and Photonics News* **11**, No. 10 (October Issue), 17 (2000). (Invited)
  46. T. H. Yoon, A. Marian, J. L. Hall and J. Ye, “Phase-coherent multi-level two-photon transitions in cold Rb atoms: Ultrahigh resolution spectroscopy via frequency stabilized femtosecond laser,” *Phys. Rev. A* **63**, Rapid Communications, 011402(R) (2001).
  47. T. H. Yoon, J. Ye, J. L. Hall, and J.-M. Chartier, “Absolute frequency measurement of the iodine-stabilized He-Ne laser at 633 nm,” *Appl. Phys. B* **72**, 221 (2001).
  48. J. L. Hall and J. Ye, “Merging the ultrasensitive, the ultrastable, and the ultrafast: A new epoch of frequency standards and optical frequency measurement,” *Optics and Photonics News* **12**, No. 2 (February Issue), 44 (2001). (Invited)
  49. H. J. Kimble, K. Birnbaum, A. C. Doherty, C. J. Hood, T. W. Lynn, H.-C. Nägerl, D. M. Stamper-Kurn, D. W. Vernooy, and J. Ye, “Real-time tracking and trapping of single atoms in cavity QED,” in *Atomic Physics 17* (ICAP 2000), *AIP Proceedings* **551**, E. Arimondo, P. De Natale, M. Inguscio, Eds., American Institute of Physics, New York, p. 103 (2001).
  50. F.-L. Hong, J. Ye, L.-S. Ma, S. Picard, Ch. J. Bordé, and J. L. Hall, “Rotation dependence of electric quadrupole hyperfine interaction in the ground state of molecular iodine by high resolution laser spectroscopy,” *J. Opt. Soc. Am. B* **18**, 379 (2001).
  51. S. A. Diddams, D. J. Jones, J. Ye, S. T. Cundiff, J. L. Hall, J. K. Ranka, and R. S. Windeler, “Direct RF to optical frequency measurements with a femtosecond laser comb,” *IEEE Trans. Instrum. Meas.* **50**, 552 (2001).
  52. R. K. Shelton, L.-S. Ma, H. C. Kapteyn, M. M. Murnane, J. L. Hall, and J. Ye, “Synchronization and phase locking of two mode-locked femtosecond lasers,” in *Laser Frequency Stabilization, Standards, Measurement, and Applications*, J. L. Hall and J. Ye, Eds., SPIE **4269**, p. 105 (2001). (Invited)
  53. J. L. Hall and J. Ye, Editors, *Laser Frequency Stabilization, Standards, Measurement, and Applications*, SPIE **Proceedings 4269** (2001).
  54. S. J. van Enk, J. McKeever, H. J. Kimble, and J. Ye, “Cooling of a single atom in an optical trap inside a resonator,” *Phys. Rev. A* **64**, 013407 (2001).
  55. T. H. Yoon, A. Marian, J.L. Hall, and J. Ye, “High resolution Rb two-photon spectroscopy with ultrafast lasers,” in *Laser Frequency Stabilization, Standards, Measurement, and Applications*, J. L. Hall and J. Ye, Eds., SPIE **4269**, p. 50 (2001). (Invited)

56. R. K. Shelton, L.-S. Ma, H. C. Kapteyn, M. M. Murnane, J. L. Hall, and J. Ye, "Phase-coherent optical pulse synthesis from separate femtosecond lasers," *Science* **293**, 1286 (2001).
57. L.-S. Ma, R. K. Shelton, H. C. Kapteyn, M. M. Murnane, and J. Ye, "Sub-10-femtosecond active synchronization between two passively mode-locked Ti:Sapphire oscillators," *Phys. Rev. A* **64**, Rapid Communications, 021802(R) (2001).
58. C. J. Hood, H. J. Kimble, and J. Ye, "Characterization of high-finesse mirrors: Loss, phase shifts, and more structure in an optical cavity," *Phys. Rev. A* **64**, 033804 (2001).
59. T. M. Fortier, D. J. Jones, S. A. Diddams, J. L. Hall, J. Ye, S. T. Cundiff, and R. S. Windeler, "Carrier-envelope phase control of femtosecond modelocked lasers" in Optical Pulse and Beam Propagation III, Y. B. Band, Ed., SPIE **4271**, p. 183 (2001). (Invited)
60. Th. Udem, J. Reichert, R. Holzwarth, S. A. Diddams, D. J. Jones, J. Ye, S. T. Cundiff, T. W. Hänsch, and J. L. Hall, "A new type of frequency chain and its application to fundamental frequency metrology," in Hydrogen II: Physics of Simple Atomic Systems, S. Karshenboim, Ed., Springer Verlag, Berlin, p. 125 (2001). (Invited)
61. S. T. Cundiff, J. Ye, and J. L. Hall, "Optical frequency synthesis based on mode-locked laser," *Rev. Sci. Instrum.* **72**, 3749 (2001). (Invited)
62. J. L. Hall, J. Ye, S. A. Diddams, L.-S. Ma, S. T. Cundiff, and D. J. Jones, "Ultra-Sensitive Spectroscopy, the Ultra-stable Lasers, the UltraFast Lasers, and the Seriously Nonlinear Fiber: A New Alliance for Physics and Metrology," *IEEE J. of Quantum Electron.* **37**, 1482 (2001). (Invited)
63. R. K. Shelton, L.-S. Ma, H. C. Kapteyn, M. M. Murnane, J. L. Hall, and J. Ye, "Active synchronization and carrier phase locking of two separate mode-locked femtosecond lasers," *J. Mod. Opt.* **49**, 401 (2002).
64. J. Ye, L.-S. Ma, and J. L. Hall, "Molecular Iodine Clock," *Phys. Rev. Lett.* **87**, 270801 (2001).
65. C. J. Hood, T. W. Lynn, A. C. Doherty, D. W. Vernooy, J. Ye, and H. J. Kimble, "Single atoms bound in orbit by single photons," *Laser Physics* **11**, 1190 (2001).
66. R. K. Shelton, S. Foreman, L.-S. Ma, J. L. Hall, H. C. Kapteyn, M. M. Murnane, M. Notcutt, and J. Ye, "Subfemtosecond timing jitter between two independent, actively synchronized, mode-locked lasers," *Opt. Lett.* **27**, 312 (2002).
67. J. Ye and J. L. Hall, "Quantum noise limited detection of absorption in high finesse cavities enabled by modulation techniques," in EXPERIMENTAL METHODS IN THE PHYSICAL SCIENCES (Vol. 40): Cavity-Enhanced Spectroscopies, R. D. van Zee and J. P. Looney, Eds., Academic Press, New York, p. 83 (2002). (Invited)
68. T. M. Fortier, J. Ye, S. T. Cundiff, and R. S. Windeler, "Measurement of nonlinear phase generated in air-silica microstructure fiber," *Opt. Lett.* **27**, 445 (2002).
69. J. Ye, J. L. Hall, J. D. Jost, L.-S. Ma, and J.-L. Peng, "Coherent optical frequency synthesis and distribution," in Laser Spectroscopy XV, S. Chu, V. Vuletic, A. J. Kerman, and C. Chin, Eds., World Scientific, Singapore, p. 97 (2002). (Invited)

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71. W. Y. Cheng, L. Chen, T. H. Yoon, J. L. Hall, and J. Ye, "Sub-Doppler Iodine Transitions Near the Dissociation Limit (530 to 495 nm)," *Opt. Lett.* **27**, 571 (2002).
72. R. J. Jones, W. Y. Cheng, K. W. Holman, L. Chen, J. L. Hall, and J. Ye, "Absolute frequency measurement of the length standard at 514 nm," *Appl. Phys. B* **74**, 597 (2002). (Rapid Communications)
73. E. O. Potma, D. J. Jones, J.-X. Cheng, X. S. Xie, and J. Ye, "High sensitivity coherent anti-Stokes Raman scattering microscopy with two tightly synchronized picosecond lasers," *Opt. Lett.* **27**, 1168 (2002).
74. J. Ye, S. T. Cundiff, S. Foreman, T. M. Fortier, J. L. Hall, K. W. Holman, D. J. Jones, J. D. Jost, H. C. Kapteyn, K. A. H. v. Leeuwen, L.-S. Ma, M. M. Murnane, J.-L. Peng, and R. K. Shelton, "Phase coherent synthesis of optical frequencies and waveforms," *Appl. Phys. B* **74**, S-27 (2002).
75. C. Ishibashi, J. Ye, and J. L. Hall, "Issues and applications in ultra-sensitive molecular spectroscopy," in Methods for Ultrasensitive Detection II, C. W. Wilkerson, Ed., SPIE **4634**, p. 58 (2002). (Invited)
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## **Invited talks (Colloquia, Seminars, Keynote & Invited Conference talks):**

1. P. Jungner, S. Swartz, M. Eickhoff, J. Ye, J. L. Hall, and S. Waltman, "Measurement of the absolute frequency of molecular iodine transitions near 532 nm," Conference on Precision Electromagnetic Measurements, Boulder, Colorado, June 27 - July 1, 1994.
2. J. Ye, L.-S. Ma, and J. L. Hall, "Towards the ultimate optical detection sensitivity: New spectroscopic opportunities - and a zillion new wavelength/frequency standards," International Symposium on Molecular Spectroscopy, Ohio State University, Ohio, June 10-14, 1996.
3. J. Ye, L.-S. Ma, and J. L. Hall, "Ultrahigh sensitivity and precision in laser spectroscopy of weakly absorbing gases," Optical Society of America 1996 Annual Meeting, Advance Program, p.162, Rochester, New York, October 20-24, 1996.
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5. C. J. Hood, T. W. Lynn, H. Mabuchi, M. S. Chapman, J. Ye, and H. J. Kimble, "Real-time coavity QED with single atoms," International Quantum Electronics Conference, San Francisco, California, May 18 - 23, 1998.
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7. J. Ye, C. J. Hood, T. Lynn, H. Mabuchi, D. Vernooy, and H. J. Kimble, "Quantum manipulation and measurement of single atoms in optical cavity QED," Conference on Precision Electromagnetic Measurements, Washington, D.C., July 5-10, 1998.
8. J. Ye, H. Mabuchi, D. Vernooy, C. J. Hood, T. Lynn, J. Buck, and H. J. Kimble, "Coherent control of trapped neutral atoms," Trapped Charged Particles and Fundamental Physics, Monterey, California, August 30 – September 4, 1998.
9. H. J. Kimble, C. J. Hood, H. Mabuchi, T. W. Lynn, S. J. Van Enk, D. W. Vernooy, and J. Ye, "Cavity QED for quantum logic, communication, and networks," Optical Society of America 1998 Annual Meeting, Conference Program P151, Baltimore, Maryland, October 4-9, 1998.
10. C. Hood, T. Lynn, C. Nägerl, D. Vernooy, J. Ye, and H. J. Kimble, "Cavity QED with cold atoms," First Annual Workshop of the Southwest Quantum Information and Technology Network, Albuquerque, New Mexico, April 30 – May 2, 1999.
11. H.J. Kimble, J. Buck, C. Fuchs, A. Furusawa, C. Hood, H. Mabuchi, T. Lynn, J. Sorensen, Q. Turchette, S. van Enk, D. Vernooy, and J. Ye, "Quantum communication and computation in quantum optics," Quantum Electronics and Laser Science Conference, QELS'99 Tech. Digest, p. 111, Baltimore, Maryland, May 23 - 28, 1999.
12. J. Ye, "Modern laser spectroscopy: ultrasensitive, ultrastable, and ultrafast," Seminar on Modern Optics and Spectroscopy, Massachusetts Institute of Technology, March 14, 2000.

13. J. Ye, "Modern laser spectroscopy: ultrasensitive, ultrastable, and ultrafast: precision control of light field and matter," Physics Seminar, Colorado State University, April 3, 2000.
14. D. J. Jones, S. A. Diddams, J. Ye, S. T. Cundiff, J. L. Hall, J. K. Ranka, R. S. Windeler, and A. J. Stentz, "Optical frequency synthesizer spanning 260 to 590 THz directly referenced to the cesium standard," Quantum Electronics and Laser Science Conference (QELS), San Francisco, California, May 7-12, 2000. (Post Deadline paper)
15. S. A. Diddams, D. J. Jones, J. Ye, S. T. Cundiff, and J. L. Hall, "Linking microwave and optical frequencies with a femtosecond laser comb," IEEE Frequency Control Symposium, Kansas City, Missouri, May, 2000.
16. J. Ye, "Optical frequency metrology and quantum coherence enabled by stabilized ultrafast lasers," Physics Seminar, University of Oregon, June 3, 2000.
17. J. Ye, C. J. Hood, T. W. Lynn, C. Naegerl, D. W. Vernooy, and H. J. Kimble, "Real time tracking and trapping of single atoms in cavity QED," 31st Annual Meeting of the Division of Atomic, Molecular, and Optical Physics (DAMOP), American Physical Society, Storrs, Connecticut, June 14 - 17, 2000. Bulletin Am. Phys. Soc. 45, No. 3, 24 (2000).
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19. J. Ye, "Hertz-level frequency marks across the entire visible spectrum: dawn of optical atomic clocks and optical frequency synthesizers," Physics seminar, California Institute of Technology, Pasadena, California, September 17, 2000.
20. J. Ye, "Ultrasensitive laser spectroscopy, Optical atomic clock and optical frequency synthesizers," General physics seminar, FOM Institute for Plasma Physics 'Rijnhuizen' and University of Nijmegen, Netherlands, December 12, 2000.
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23. J. Ye, "Precision phase control of femtosecond lasers: optical atomic clocks, optical frequency synthesizers, and optical waveform synthesis," Physics Seminar, Stanford University, Palo Alto, California, March 12, 2001.
24. J. Ye, "Precision phase control of femtosecond lasers: from optical frequency synthesizer to quantum dynamics," Physics Seminar, University of California at Berkeley, Berkeley, California, March 14, 2001.

25. J. L. Hall, J. Ye, and S. T. Cundiff, "Along the highway to optical clocks: an overview," American Physical Society Annual meeting, Washington DC, April 28 – May 1, 2001. *Bulletin Am. Phys. Soc.* 46, No. 2, 136 (2001).
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28. R. K. Shelton, L.-S. Ma, H. C. Kapteyn, M. M. Murnane, J. L. Hall, and J. Ye, "Coherent pulse synthesis from two (formerly) independent passively mode-locked Ti:sapphire oscillators," Conference on Lasers and Electro-Optics (CLEO), Baltimore, Maryland, May 6-11, 2001. (Post-deadline paper, CPD10)
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30. J. Ye, "Optical atomic clock and coherent optical waveform synthesis," The 15th International Conference on Laser Spectroscopy (ICOLS-XV), Snowbird, Utah, June 10-16, 2001.
31. S. T. Cundiff, J. Ye, and J. L. Hall, "Femtosecond methods for optical frequency measurement," The 8th International Workshop on Femtosecond Technology (FST2001), Tsukuba, Japan, June 28-29, 2001.
32. J. Ye, "Coherent synthesis of optical frequencies and waveforms," 2001 Atomic Physics Gordon Research Conference, Williamstown, Massachusetts, June 17-22, 2001.
33. J. Ye, "Coherent pulse synthesis from separate ultrafast lasers," Ultrafast Optics III, Château Montebello, Québec, Canada, July 22 - 26, 2001. (KEYNOTE SPEECH)
34. J. Ye, "Coherent frequency synthesis and pulse waveform generation in the optical spectrum," The 2001 Workshop on Laser Physics and Quantum Optics, Jackson Hole, Wyoming, July 30 – August 3, 2001.
35. J. Ye, R. K. Shelton, L.-S. Ma, H. C. Kapteyn, and M. M. Murnane, "Synchronizing two mode-locked femtosecond lasers at 10 fs and optical frequency comb synthesis," Optical Society of America 2001 Annual meeting, Long Beach, California, Oct. 14-19, 2001.
36. J. Ye, "Controlling light: What does the future hold?" OSA Town Hall meeting panel, Optical Society of America 2001 Annual meeting, Long Beach, California, Oct. 14-19, 2001.
37. J. Ye, "Time meets Frequency: Coherent optical waveform generation and optical frequency synthesis," Physics Colloquium, New York University, November 8, 2001.

38. J. Ye, "Time meets Frequency: Coherent optical waveform generation and optical frequency synthesis," Physics Colloquium, State University of New York at Stony Brook, November 9, 2001.
39. S. T. Cundiff, J. Ye, and J. L. Hall, "Time meets Frequency: Phase stabilization of ultrafast pulses and optical frequency metrology with mode-locked lasers," Lasers and Electro-Optics Society (LEOS) 2001 Annual meeting, San Diego, California, November 15, 2001.
40. J. Ye, "Time meets Frequency: Coherent optical waveform generation and optical frequency synthesis," Physics Colloquium, Montana State University, December 14, 2001.
41. J. Ye, "Light: Time meets frequency," Physics Colloquium, University of Virginia, Charlottesville, Virginia, February 8, 2002.
42. J. Ye, "Atomic Sr cooling dynamics: Towards the ultimate optical frequency standard," Harvard/MIT Center for Ultracold Atoms Colloquium, Cambridge, May 7, 2002.
43. J. Ye, "Coherent control of light: optical clock, optical frequency synthesizer and optical pulse synthesis," EECS/RLE Seminar on Optics and Quantum Electronics, Massachusetts Institute of Technology, Cambridge, MA, May 8, 2002.
44. R. J. Jones, L. Chen, W.-Y. Cheng, S. Foreman, J. L. Hall, K. Holman, D. Jones, J. Jost, A. Marian, and J. Ye, "Precision measurements and applications of femtosecond frequency combs," Annual Meeting of the Division of Atomic, Molecular, and Optical Physics (DAMOP), American Physical Society, Williamsburg, VA, May 29-June 1, 2002. *Bulletin Am. Phys. Soc.* 47, No. 3, 96 (2002).
45. J. L. Hall and J. Ye, "Optical frequency measurement and standards," Conference on Precision Electromagnetic Measurements, Technical Digest, p. 277, Ottawa, Canada, June 16-21, 2002. (Conference Plenary Talk)
46. J. Ye, S. T. Cundiff, J. L. Hall, D. J. Jones, R. J. Jones, J. D. Jost, H. C. Kapteyn, L.-S. Ma, and R. Shelton, "Phase coherent synthesis of optical frequencies and waveforms," International Quantum Electronics Conference (IQEC), Technical Digest, p. 281, Moscow, Russia, June 22-28, 2002.
47. S. T. Cundiff, T. M. Fortier, D. J. Jones, and J. Ye, "Stabilization of mode-locked lasers for optical frequency metrology," International Quantum Electronics Conference (IQEC), Technical Digest, p. 280, Moscow, Russia, June 22-28, 2002.
48. J. Ye, "Control of coherent light," 2002 Multiphoton Process Gordon Research Conference, Tilton, New Hampshire, June 30 – July 5, 2002.
49. J. Ye, "Control of coherent light and applications," XVIII International Conference on Atomic Physics (ICAP 2002), Cambridge, MA, July 28 – August 2, 2002.
50. J. Ye and J. L. Hall, "Coherent control of light and its broad applications," International Union of Radio Science (URSI) 2002 General Assembly, Oral Presentations Program, p. 80, Maastricht, the Netherlands, August 17 –24, 2002.
51. J. Ye, "Optical clocks and optical frequency synthesizers," Topical Workshop on the Taming of Optical Frequencies: Towards Next Generation Photonic Networks, Technical Digest, p. 61, Tokyo, Japan, September 2 – 4, 2002.

52. M. Silva, J. L. Hall, and J. Ye, "Quantum noise limited detection of absorption in high finesse cavities enabled by modulation techniques," Optical Society of America Annual meeting, Conference Program, p.116, Orlando, Florida, Sep. 29 – Oct. 3, 2002.
53. J. Ye, "Control of coherent light: time meets frequency," Argonne National Laboratory Physics Colloquium, Argonne, Illinois, Oct. 18, 2002.
54. J. Ye, "Control of coherent light: applications in time and frequency domain," Kansas State University, Physics Colloquium, Manhattan, Kansas, Nov. 5, 2002.
55. J. Ye, "From relative to absolute: optical phase measurement and control in ultrashort pulses," IEEE Lasers and Electro-Optics Society (LEOS) Annual Meeting, Conference Proceedings, p. 167, Glasgow, Scotland, UK, Nov. 10 – 14, 2002. (Conference Tutorial)
56. J. Ye, "Phase coherent synthesis and control of light," 2002 Material Research Society Fall Meeting, Conference Program, p. 288, Boston, Massachusetts, December 2 – 6, 2002.
57. J. Ye, "Ultra-precise phase control of ultra-short pulses," Argonne National Laboratory, Advance Photon Source Physics Seminar, Argonne, Illinois, Dec. 6, 2002.
58. T. H. Loftus and J. Ye, "Laser cooled atomic Sr: unconventional cooling dynamics, magnetic trapping, and future optical standards," The 5th Laser Cooling Workshop, Awaji Yumebutai, Japan, Jan. 7 – 9, 2003.
59. J. R. Bochinski, E. R. Hudson, and J. Ye, "Cold molecules: deceleration and trapping of neutral ground-state free radical OH," American Association for the Advancement of Science (AAAS) Annual Meeting, Conference Program S56, Denver, Colorado, Feb. 13 – 18, 2003.
60. J. Ye, "Ultra-slow atoms, ultra-fast lasers, ultra-sensitive detections, and ultra-precise measurements : Delicious ultras in modern laser spectroscopy," Optical Science and Engineering Program (OSEP) seminar, JILA, University of Colorado, Boulder, Colorado, March 31, 2003.
61. J. Ye, "Control of coherent light: Time meets frequency," Physics Colloquium, University of Texas, Austin, Texas, April 9, 2003.
62. J. Ye, "Control of coherent light and general applications of ultrashort pulses," Annual Meeting of the Division of Atomic, Molecular, and Optical Physics (DAMOP), American Physical Society, Boulder, CO, May 21 – 24, 2003. Bulletin Am. Phys. Soc. 48, No. 3, p. 125 (2003).
63. J. Ye, "Precise phase control of short pulses," Conference on Lasers and Electro-Optics (CLEO), CLEO '03, Baltimore, Maryland, June 1-6, 2003. (JTuC2).
64. S. T. Cundiff, T. M. Fortier, D. J. Jones, and J. Ye, "Phase stabilization of modelocked lasers," Conference on Lasers and Electro-Optics (CLEO), CLEO '03, Baltimore, Maryland, June 1-6, 2003. (JTUB2)
65. K. W. Holman, D. J. Jones, S. T. Cundiff, J. Ye, J. B. Schlager, and E. P. Ippen, "Optical phase-coherent link between an optical atomic clock and 1550-nm mode-locked lasers," Conference on Lasers and Electro-Optics (CLEO), CLEO '03, Baltimore, Maryland, June 1-6, 2003. (Postdeadline presentation) (CThPDA-2940)

66. J. Ye, "A new era in molecular spectroscopy," WE-Heraeus-Seminar on Astrophysics, Clocks and Fundamental Constants, Physikzentrum Bad Honnef, Germany, June 16 – 18, 2003.
67. J. Ye, "Ultra-precise phase control of short pulses," The 16th International Conference on Laser Spectroscopy (ICOLS03), Palm Cove, North Queensland, Australia, July 13-18, 2003.
68. J. Ye, "Control of coherent light: spectrum generation, waveform synthesis, and atomic clocks," 2003 Gordon Research Conference on Quantum Control of Light and Matter, Mt. Holyoke College, Mass., August 3 – 8, 2003.
69. T. Loftus, X.-Y. Xu, J. L. Hall, A. Gallagher, and J. Ye, "Probing two-level atom thermodynamics, unconventional sub-Doppler cooling, and metastable state magnetic traps with laser cooled atomic strontium," Second Workshop on Cold Alkaline-Earth Atoms, Copenhagen, Denmark, September 11 – 13, 2003.
70. J. Ye, "Phase coherent manipulation of light," The 9th Japan-US Joint Seminar, Yatsugatake, Japan, September 17 – 19, 2003.
71. E. R. Hudson, J. R. Bochinski, H. J. Lewandowski, and J. Ye, "Exploring cold free radical neutral OH molecules," 2003 Physical Chemistry Meeting of Japan, Kyoto, Japan, September 24 – 27, 2003.
72. J. Ye, "Laser cooled atomic Sr: unconventional cooling dynamics, magnetic trapping, and future optical standards," 2003 European Network on Cold Atoms and Ultraprecise Atomic Clocks Annual meeting, Braunschweig, Germany, October 10 – 12, 2003.
73. J. Ye, "Cavity-enhanced laser spectroscopy: A demonstrated path to ultrahigh detection sensitivities," Federation of Analytical Chemistry and Spectroscopy Societies (FACSS) 30th Annual meeting, Conference Program, p.104, Ft. Lauderdale, Florida, October 19 – 23, 2003.
74. D. J. Jones, K. W. Holman, D. Hudson, A. Marian, J. Ye, J. B. Schlager, and E. P. Ippen, "Using the phase coherence of carrier-envelope phase-stabilized fs lasers," IEEE Lasers and Electro-Optics Society (LEOS) 16th Annual Meeting, Conference Proceedings, p. 12, Tucson, Arizona, Oct. 26 – 30, 2003.
75. J. Ye, "Control of coherent light: (precision-) frequency meets (ultrafast-) time," Physics Colloquium, California Institute of Technology, Pasadena, California, December 4, 2003.
76. J. R. Bochinski, E. R. Hudson, H. J. Lewandowski, and J. Ye, "Cold Free Radical Molecules in the Laboratory Frame," Ultracold Polar Molecules: Formation and Collisions – Joint Workshop with Harvard/MIT Center for Ultracold Atoms, Cambridge, Massachusetts, January 8 – 10, 2004.
77. J. Ye, "Phase-coherent synthesis and control of light – optical atomic clocks," and "A new regime in molecular spectroscopy," Visiting Professor lecture series, Institut für Experimentalphysik, Universität Innsbruck, Austria, Jan. 8 – 18, 2004.
78. J. Ye, "New era in optical frequency metrology, spectroscopy, and nonlinear optics," Colloquium, Department of Physics, University of Wisconsin, Madison, Wisconsin, Jan. 23, 2004.

79. J. Ye, "Control of coherent light and its applications to molecular spectroscopy," 51st Annual Conference of the Western Spectroscopy Association, Asilomar Conference Center, Pacific Grove, California, January 28 – 30, 2004.
80. J. Ye, "Ultra-precise phase control of ultra-short pulses: principles and applications," Special seminar, Lawrence Berkeley National Laboratory, Berkeley, CA, Feb. 10, 2004.
81. J. Ye, "A new era in molecular spectroscopy: high sensitivity, definitive precision, and cool resolution," National Research Council of Canada, 100 Sussex Dr, 2069, Ottawa Ontario K1A 0R6 Canada, February 27, 2004.
82. J. Ye, "Ultracold atoms and precision spectroscopy," MIT/Harvard Center for Ultracold Atoms Colloquium, Cambridge, MA, April 27, 2004.
83. R. J. Jones and J. Ye, "Amplification of femtosecond pulses by coherent addition in passive enhancement cavities," Conference on Lasers and Electro-Optics (CLEO), CLEO '04, San Francisco, California, May 16-21, 2004. (Postdeadline presentation) (CPDC8)
84. O. D. Mücke, O. Kuzucu, N. C. Wong, E.P. Ippen, F. X. Kaertner, S. M. Foreman, D. J. Jones, L.-S. Ma, J. L. Hall, and J. Ye, "Experimental implementation of optical clockwork without carrier-envelope phase control," Conference on Lasers and Electro-Optics (CLEO), CLEO '04, San Francisco, California, May 16-21, 2004. (Postdeadline presentation) (CPDC9)
85. D. J. Jones, K. W. Holman, and J. Ye, "Laser synchronization and timing distribution," Workshop on the Physics of Seeded Free-Electron-Lasers, Cambridge, Massachusetts, June 17 – 19, 2004.
86. J. Ye, "Control of coherent light and its applications to molecular spectroscopy," International Symposium on Molecular Spectroscopy, 59<sup>th</sup> Meeting, Conference Proceedings, p. 160, Columbus, Ohio, June 21 – 25, 2004. (Conference Plenary)
87. J. Ye, "Ultracold, Ultrafast, and Ultraprecise – a new paradigm in precision measurements," International Conference on Physics Education and Frontier Research, Conference Proceedings, p. 16, Shanghai, China, June 28 – July 1, 2004.
88. J. Ye, "Ultracold atoms and precision measurements," International Symposium on Cold Atom Physics (ISCAP-I), Lushan, Jiangxi, China, July 5 – 7, 2004.
89. J. Ye, "Precise and ultrafast measurement in ultracold atoms," Physics seminar, Hänsch group annual meeting, Ringberg, Germany, July 19 – 23, 2004.
90. R. J. Jones and J. Ye, "Precision measurements with stabilized femtosecond lasers" Modern Problems in Laser Physics 2004, Novosibirsk, Russia, August 22 – 26, 2004.
91. J. Ye, "Optical frequency measurement and synthesis," 2004 IEEE International Ultrasonics, Ferroelectrics, and Frequency Control Joint 50th Anniversary Conference, Montreal, Canada, August 23 – 27, 2004. (Conference tutorial)
92. D. J. Jones, K. W. Holman, and J. Ye, "Distribution of frequency standards using mode-locked fiber lasers," European Physical Society–QEOD Europhoton Conference on Solid-State and Fiber Coherent Light Sources, Lausanne, Lake Geneva, Switzerland, August 29 – September 3, 2004 (WeD1).

93. J. Ye, "Coherent control of light – from optical atomic clocks to precision ultrafast spectroscopy," Princeton University, Institute for the Science and Technology of Materials (PRISM) Seminar, September 15, 2004.
94. J. Ye, "Ultracold, ultrafast, and ultra-precise – a new paradigm in precision spectroscopy," Frontiers in Optics 2004/Laser Science XX, Conference Program p. 119 (LThD2), Rochester, New York, October 10 – 14, 2004.
95. J. Ye, "Precise control and measurement in atom-light interactions," Physics Colloquium, University of Maryland, College Park, Maryland, October 12, 2004.
96. J. Ye, "Ultracold, ultrafast, and ultra-precise – a new paradigm in precision measurement," The 12th Laser Physics Workshop, Lijiang, China, October 24 – 30, 2004.
97. J. Ye, "Precision spectroscopy in ultracold atoms," Physics Colloquium, East China Normal University, Shanghai, October 28, 2004.
98. R. J. Jones and J. Ye, "Ultra-precise optical phase control: From atomic state manipulation to extreme nonlinear optics," Berkeley Attosecond MURI Project – Kickoff Workshop, December 1 – 2, 2004.
99. T. Ido, T. H. Loftus, M. Boyd, A. Ludlow, and J. Ye, "Precision spectroscopy and density-related frequency shifts in ultracold Sr," Symposium on Cold Atom/Matter Waves, Abingdon, UK, December 1 – 3, 2004.
100. J. Ye, "Phase coherent manipulation of light – from precision measurement to ultrafast spectroscopy," 2005 Advanced Solid State Photonics Conference Topical Meeting, Conference Program, p. 10, Vienna, Austria, February 6 – 9, 2005.
101. J. Ye, "Cold polar molecules – Stark deceleration, precision spectroscopy, and future laser cooling," European Research and Training Network on Cold Molecules – "*Applications and dynamics of cold molecules*," Hannover, Germany, February 20 – 23, 2005.
102. J. Ye, "Bridging precision measurement and coherent control," Physics Colloquium, University of Connecticut, Storrs, Connecticut, March 4, 2005.
103. J. Ye, "Coherent control and precision spectroscopy," Joint Atomic Physics Colloquium of ITAMP and Physics Department, Harvard, Cambridge, MA, April 6, 2005.
104. J. Ye, "Coherent control and precise measurement in atom-light interactions," Physics Colloquium, University of Washington, Seattle, April 25, 2005.
105. R. J. Jones, K. D. Moll, M. J. Thorpe, and J. Ye, "High-Harmonic Generation at 100 MHz Repetition Frequency: Efficient Production of a VUV Frequency Comb," Conference on Lasers and Electro-Optics (CLEO), CLEO '05, Baltimore, Maryland, May 22-27, 2005. (Postdeadline presentation) (QPDA9)
106. F. X. Kaertner, O. D. Mücke, L. Matos, N. C. Wong, D. Kleppner, E. P. Ippen, S. M. Foreman, A. Marian, J. Ye, E. A. Petrukhin, and M. A. Gubin "Solid-State Laser Technology for Optical Clocks," International Conference on Coherent and Nonlinear Optics/International Conference on Lasers, Applications, and Technologies (ICONO/LAT), Conference Program p. 127 (LSuC1), St. Petersburg, Russia, May 11-15, 2005.

107. J. Ye, M. Stowe, A. Marian, T. Ido, M. Boyd, A. Ludlow, T. Zelevinsky, S. Blatt, and R. J. Jones, "Coherent control and precision spectroscopy in ultracold atoms," International Conference on Coherent and Nonlinear Optics/International Conference on Lasers, Applications, and Technologies (ICONO/LAT), Conference Program p. 115 (LSI2), St. Petersburg, Russia, May 11-15, 2005.
108. D. J. Jones, K. Holman, D. Hudson, and J. Ye, "Distribution of high-stability and low-jitter frequency signals over optical fiber networks," International Conference on Coherent and Nonlinear Optics/International Conference on Lasers, Applications, and Technologies (ICONO/LAT), Conference Program p. 121 (LSM1), St. Petersburg, Russia, May 11-15, 2005.
109. J. Ye, T. Ido, M. M. Boyd, A. D. Ludlow, T. Zelevinsky, S. Blatt, M. Stowe, A. Marian, and R. J. Jones, "Ultrafast-based precision measurements and control in ultracold world," The Canadian Association of Physicists 2005 Congress, University of British Columbia, Vancouver, June 5 – 8, 2005.
110. M. M. Boyd, T. Ido, A. D. Ludlow, T. Zelevinsky, S. Blatt, M. Notcutt, S. Foreman, and J. Ye, "Optical frequency standards based on ultra-cold strontium atoms," First European Space Agency (ESA) International Workshop on Optical Clocks, ESTEC (The Netherlands), June 8 – 10, 2005.
111. J. Ye, "Precision spectroscopy meets ultrafast control," The 17th International Conference on Laser Spectroscopy (ICOLS05), the Cairngorms National Park, Aviemore, Scotland, June 19 – 24, 2005.
112. J. Ye, "Precision measurements in atomic physics," 2005 Gordon Research Conference on Atomic Physics, Tilton, New Hampshire, June 26 – July 1, 2005. (Discussion leader)
113. T. Ido, M. M. Boyd, A. Ludlow, T. Zelevinsky, S. Blatt, S. Foreman, M. Notcutt, and J. Ye, "Optical atomic clocks based on ultracold neutral strontium atoms," International Conference on Quantum Electronics (IQEC2005), Tokyo, Japan, July 11 – 15, 2005.
114. J. Ye, "Control of coherent light: From precision spectroscopy to extreme nonlinear optics," 2005 IEEE LEOS Summer Topical Meeting on Optical Frequency & Time Measurement and Generation (OFTMAG), San Diego, California, July 25 – 27, 2005. (Conference Plenary)
115. D. J. Jones, K. W. Holman, D. Hudson, and J. Ye, "Stable distribution of low jitter frequency standards over optical fiber networks," 2005 IEEE LEOS Summer Topical Meeting on Optical Frequency & Time Measurement and Generation (OFTMAG), San Diego, California, July 25 – 27, 2005.
116. J. Ye, "New Optical Technologies for Control," 2005 Gordon Research Conference on Quantum Control of Light and Matter, Waterville, Maine, July 31 – August 5, 2005. (Discussion leader)
117. J. Ye, "Uniting ultrafast, ultracold and ultraprecision," 2005 Chinese Physical Society Annual Meeting, Wuhan, China, September 18 – 21, 2005. (Conference Plenary)
118. J. Ye, "Uniting ultrafast, ultracold and ultraprecision," Physics Colloquium, Shanxi University, Taiyuan, September 15, 2005; Physics Colloquium, East China Normal University, Shanghai, September 21, 2005.

119. K. Moll, R. J. Jones, M. Thorpe, and J. Ye, "Coherent XUV generation using a passive optical cavity interacting with a femtosecond pulse train from a mode-locked laser," Ultrashort Pulse Laser Materials Interaction Workshop 2005, Directed Energy Professional Society, Boulder, Colorado, September 22 – 23, 2005.
120. R. J. Jones, K. Moll, M. Thorpe, and J. Ye, "High-harmonic generation at 100 MHz repetition frequency using a femtosecond enhancement cavity," Joint Conference on Ultrafast Optics V and Applications of High Field and Shortwavelength Sources XI (UFO/HFSW 2005), Nara, Japan, September 25 – 30, 2005. (M3-1)
121. J. Ye, "Precision measurement meets ultrafast science," Physics Colloquium, Stanford University, Stanford, California, October 4, 2005.
122. J. Ye, "Optical phase control from  $10^{-15}$  s to 1 s: Precision measurement meets ultrafast science," The Amazing Light Young Scholars Competition, Symposium of Amazing Light: Visions for Discovery, Berkeley, California, October 6 – 8, 2005.
123. E. Hudson, B. Sawyer, and J. Ye, "Production of cold formaldehyde molecules for study and control of chemical reaction dynamics with hydroxyl radicals," European Cold Molecules Network meeting, Ringberg, Germany, October 19 – 22, 2005.
124. J. Ye, "Precision measurement meets ultrafast science," Colloquium, Max-Planck-Institut für Quantenoptik (MPQ), Garching, Germany, Oct. 24, 2005.
125. J. Ye, "Practical long range interferometry in optical fibers," Workshop on Quantum Repeaters for Long-Distance Quantum Communications, Cambridge, MA, November 3 – 4, 2005.
126. J. Ye, "Bridging precision measurement and coherent control," Colloquium, Department of Physics, Yale University, New Haven, CT, November 18, 2005.
127. J. Ye, "Ultracold Alkaline Earth Strontium atoms," AMO Seminar, Department of Physics, Yale University, New Haven, CT, November 18, 2005.
128. J. Ye, "Femtosecond frequency comb and real-time ultrasensitive spectroscopy," Chemical Physics Seminar series, California Institute of Technology, Pasadena, CA, November 29, 2005.
129. J. Ye and R. J. Jones, "Control of coherent light: From precision spectroscopy to extreme nonlinear optics," Australasian Conference on Optics, Lasers and Spectroscopy 2005 Meeting (ACOLS'05), Rotorua, New Zealand, December 6 – 9, 2005. (Conference Plenary)
130. J. Ye, "Uniting precision measurements and quantum control," International Conference on Quantum Optics, Hong Kong, December 16 – 20, 2005.
131. J. Ye, "The state-of-the-art in light control," "Ultracold matters, Ultrastable lasers, Ultraprecise measurements, and Ultrafast dynamics," Physics Seminar and Colloquium, Shanghai Jiao Tong University, December 21 – 22, 2005.
132. J. Ye, "Optical atomic clock based on ultracold fermionic strontium atoms," The 36th Winter Colloquium on the Physics of Quantum Electronics, Snowbird, Utah, January 2 – 6, 2006.

133. J. Ye, "Ultrafast science united with optical frequency metrology," Institute for Molecules & Materials, Radboud Universiteit Nijmegen, Nijmegen, the Netherlands, January 6, 2006.
134. J. Ye, "Uniting precision measurement and quantum control," Physics Colloquium, New York University, New York, January 19, 2006.
135. J. Ye, "Cold molecules – Stark deceleration and precision spectroscopy," Colloquium, James Franck Institute, University of Chicago, February 14, 2006.
136. J. Ye, "Uniting precision measurement and quantum control," Physics Colloquium, University of Michigan, February 15, 2006.
137. J. Ye, "Uniting precision measurement and quantum control," Physics Colloquium, University of Chicago, February 16, 2006.
138. E. R. Hudson, B. Sawyer, B. Lev, and J. Ye, "Precision spectroscopy with cold molecules," Training School and Workshop on Achievements and Perspectives of Cold Molecules (COMOL'06/CATS'06), Les Houches, France, February 26 – March 10, 2006.
139. J. Ye, "Precision measurement meets ultrafast science," Colloquium, Duke University, March 8, 2006.
140. J. Ye, "Cold molecules – Stark deceleration and precision spectroscopy," Colloquium, University of Kentucky, March 10, 2006.
141. J. Ye, "Optical frequency combs: precision measurement meets ultrafast control," March American Physical Society meeting, Baltimore, March 13-17, 2006.
142. J. Ye, "Precision measurement meets ultrafast science," Colloquium, Department of Physics, Colorado School of Mines, April 3, 2006.
143. T. Ido, M. M. Boyd, A. D. Ludlow, T. Zelevinsky, S. M. Foreman, and J. Ye, "Ultracold Sr at JILA: Precision spectroscopy, optical clock, and future outlooks," Workshop on Fundamental Physics, The Coseners House, Abingdon, UK, May 3 – 5, 2006.
144. J. Ye, "Precision measurement based on ultracold atoms and molecules," International Workshop "From Quantum to Cosmos: Fundamental Physics Research in Space", Washington, D.C., May 22 – 24, 2006.
145. J. Ye, "Direct frequency comb spectroscopy – from precision measurement to real-time ultrasensitive detection," Panel Session, 2006 Research Lab Expo (ReLEX), R&D Magazine, May 23 – 24, 2006.
146. R. J. Jones, K. Moll, M. J. Thorpe, and J. Ye, "100 MHz frequency combs in the XUV spectral region," Conference on Lasers and Electro-Optics, CLEO '06, Long Beach, California, May 21 – 26, 2006. (CFF4)
147. A. D. Ludlow, M. M. Boyd, T. Zelevinsky, S. M. Foreman, S. Blatt, T. Ido, and J. Ye, "Ultracold Strontium optical lattice clock," Conference on Lasers and Electro-Optics, CLEO '06, Long Beach, California, May 21 – 26, 2006. (postdeadline paper, CPDB11)
148. T. Ido, T. Zelevinsky, M. M. Boyd, A. D. Ludlow, J. Ye, R. Ciurylo, P. Naidon, and P. S. Julienne, "Narrow line photoassociation in an optical lattice," Quantum Electronics and

- Laser Science Conference, QELS '06, Long Beach, California, May 21 – 26, 2006.  
(postdeadline paper, QPDA2)
149. J. Ye, "Productions of cold molecules and their applications to precision measurement," Workshop on dipolar gases, Max-Planck Institute, Dresden, Germany, May 29 – June 2, 2006.
  150. J. Ye and S. M. Foreman, "Optical frequency measurement and synthesis," 2006 IEEE International Ultrasonics, Ferroelectrics, and Frequency Control Joint Conference (FCS 2006), Miami, Florida, June 5 – 7, 2006. (Conference tutorial)
  151. J. Ye, S. Blatt, M. M. Boyd, S. M. Foreman, T. Ido, A. D. Ludlow, and T. Zelevinsky, "Systematic study of the  $^{87}\text{Sr}$  clock transition in an optical lattice," 2006 IEEE International Ultrasonics, Ferroelectrics, and Frequency Control Joint Conference (FCS 2006), Miami, Florida, June 5 – 7, 2006.
  152. J. Ye, "Enhancement cavity for femtosecond lasers – from ultrasensitive spectroscopy to XUV frequency comb," 2006 Gordon Research Conference on Multiphoton Processes, Tilton, New Hampshire, June 11 – 16, 2006.
  153. J. Ye, "Advances in Coherent Optical Spectroscopy," OSA Topical Meeting on Coherent Optical Technologies and Applications, Whistler, BC, Canada, June 28 – 30, 2006.
  154. J. Ye, "Precision measurement based on ultracold atoms and cold molecules," 20<sup>th</sup> International Conference on Atomic Physics (ICAP 2006), Innsbruck, Austria, July 16 – 21, 2006.
  155. M. J. Thorpe and J. Ye, "Femtosecond enhancement cavities for extreme nonlinear optics and molecular spectroscopy," International Laser Physics Workshop (LPHYS'06), Lausanne, Switzerland, July 24 – 28, 2006.
  156. J. Ye, "Femtosecond enhancement cavity – from real-time ultrasensitive spectroscopy to coherent extreme nonlinear optics," XVth International Conference on Ultrafast Phenomena, Asilomar conference center, Monterey, California, July 31 – August 4, 2006.
  157. J. Ye, "Precision measurement with ultracold atoms and molecules," The 10th US-Japan Joint Seminar, Breckenridge, Colorado, August 23 – 25, 2006.
  158. J. Ye, "Precision laser tools for societal needs," Mile-Hi Optimist Club of Denver, August 31, 2006.
  159. J. Ye, "Towards ultracold molecules – Laser cooling and magnetic trapping of neutral, ground-state, polar molecules for collision studies," 2006 Atomic, Molecular, and Optical Sciences Research Meeting, U.S. Department of Energy, Airlie Conference Center, Warrenton, Virginia, September 10 – 13, 2006.
  160. J. Ye and T. Schibli, "Spectroscopy at the ultimate resolution – precision test using cold atoms and molecules," Gordon Research Conference on "Electronic Spectroscopy and Dynamics," Les Diablerets, Switzerland, September 10 – 15, 2006.
  161. T. Ido, M. M. Boyd, A. D. Ludlow, T. Zelevinsky, S. M. Foreman, S. Blatt, T. Zanon-Willette, and J. Ye, "Sr optical lattice clock," Ultracold Group II Atoms: Theory and Applications, ITAMP, Harvard University, September 18 – 20, 2006.

162. T. Zelevinsky, M. M. Boyd, A. D. Ludlow, T. Ido, J. Ye, R. Ciuryło, P. Naidon, and P. Julienne, "Strontium Narrow Line Photoassociation in an Optical Lattice," Ultracold Group II Atoms: Theory and Applications, ITAMP, Harvard University, September 18 – 20, 2006.
163. R. Ciuryło, P. Naidon, E. Tiesinga, S. Kotochigova, P. S. Julienne, T. Zelevinsky, M. M. Boyd, A. D. Ludlow, T. Ido, and J. Ye, "Optical Feshbach resonances near the intercombination transition," Ultracold Group II Atoms: Theory and Applications, ITAMP, Harvard University, September 18 – 20, 2006.
164. M. J. Thorpe and J. Ye, "Cavity-enhanced optical frequency comb spectroscopy," American Chemical Society 232nd National Meeting & Exposition, San Francisco, California, September 10 – 14, 2006.
165. J. Ye, "Precision measurement using ultracold atoms and molecules," International Workshop on ADVANCES IN PRECISION TESTS AND EXPERIMENTAL GRAVITATION IN SPACE, Galileo Galilei Institute, Firenze, Italy, September 28 – 30, 2006.
166. J. Ye, "Novel applications of optical frequency combs," Workshop on OPTICAL FREQUENCY COMBS FOR SPACE APPLICATIONS, National Physical Laboratory, UK, October 2 – 3, 2006.
167. J. Ye, "Ultracold atoms and molecules for precision spectroscopy and measurement," Frontier in Optics 2006/Laser Science XXII/The 90th OSA Annual Meeting, Rochester, New York, October 9 – 12, 2006. OSA Conference Program p. 115 (LTuK2)
168. J. Ye, "Precision metrology and coherent atom-light interactions at one second time scale," US – Japan Workshop on Quantum Information Science, Maui, Hawaii, October 16 – 19, 2006.
169. J. Ye, "New frontiers in coherent optical spectroscopy," The 13th Laser Physics Workshop, Zhang-Jia-Jie, China, October 21 – 25, 2006.
170. B. Lev and J. Ye, "Cold molecules for precision spectroscopy," 379th Wilhelm und Else Heraeus Seminar on Cold Molecules, Bad Honnef, Germany, October 29 – November 02, 2006.
171. J. Ye, "Precise measurement and control of light – matter interactions," Colloquium, Department of Physics, University of Nevada, Reno, December 1, 2006.
172. J. Ye, "Optical phase coherence," Review of Attosecond Instrumentation MURI Project, University of California, Berkeley, December 11, 2006.
173. T. Schibli, D. Yost, M. J. Thorpe, D. Hudson, and J. Ye, "Femtosecond enhancement cavities," The 37th Winter Colloquium on the Physics of Quantum Electronics, Snowbird, Utah, January 2 – 6, 2007.
174. B. Lev, B. C. Sawyer, B. K. Stuhl, and J. Ye, "Prospects for cavity-assisted laser cooling of Stark decelerated OH," The 37th Winter Colloquium on the Physics of Quantum Electronics, Snowbird, Utah, January 2 – 6, 2007.
175. J. Ye, "Precise measurement and control of light – matter interactions," Physics Colloquium, Northwestern University, Evanston, February 2, 2007.

176. J. Ye, "Femtosecond Optical Frequency Comb," OSA Student Chapter Seminar, CREOL, The College of Optics and Photonics, University of Central Florida, February 15, 2007.
177. J. Ye, "The art of light-based precision measurement," Henri Sack Memorial Lecture, School of Applied and Engineering Physics, Cornell University, February 21, 2007.
178. J. Ye, "Cold molecules – the new frontier in the ultracold world," Seminar Series of the Center for Nanoscale Systems, Cornell University, February 22, 2007.
179. J. Ye, "The art of light-based precision measurement," Physics Colloquium, Harvard University, Cambridge, March 19, 2007.
180. J. Ye, "Stable cold polar molecules," MIT-Harvard Center for Ultracold Atoms Seminar, MIT, Cambridge, March 20, 2007.
181. J. Ye, "Ultracold matters and phase coherent light – from precision measure to quantum control," Department of Physics & Astronomy, University of New Mexico, April 5, 2007.
182. J. Ye, "Stable cold polar molecules," Conference on "Correlated States in Degenerate Atomic Gases," Kavli Institute for Theoretical Physics, University of California at Santa Barbara, April 23 – 27, 2007.
183. J. Ye, "The art of precision measurement using light," Physics Colloquium, University of Oregon, April 26, 2007.
184. E. R. Hudson and J. Ye, "Probing the Variation of Fundamental Constants with Polar Molecule Microwave Spectroscopy," Fundamental Neutron Physics, March 19 - June 8, 2007, Seattle, April 27, 2007.
185. T. Zelevinsky and J. Ye, "Ultracold atoms in optical lattice – from precision measurement to quantum optics," Quantum Electronics and Laser Science Conference, QELS'07, Baltimore, Maryland, May 7 – 11, 2007.
186. T. R. Schibli, D. D. Hudson, D. C. Yost, J. Ye, I. Hartl, A. Marcinkevicius, and M. E. Fermann, " $4 \times 10^{13}$  W/cm<sup>2</sup> at 136 MHz repetition rate from a cavity-enhanced Yb-similariton fiber laser," Conference on Lasers and Electro-Optics, CLEO'07, Baltimore, Maryland, May 7 – 11, 2007. (postdeadline paper, CPDB3)
187. B. C. Sawyer and J. Ye, "Cold molecules for chemical reactions," XXII Symposium on Molecular Beams, Freiburg, Germany, May 27 – June 1, 2007.
188. J. Ye, "Sr Optical Lattice Clocks at JILA," The European Time and Frequency Forum and the IEEE International Frequency Control Symposium (EFTF-IEEE IFCS) Joint Meeting, Geneva May 29 – June 1, 2007.
189. J. Ye, "The art of light-based precision measurement," I. I. Rabi Prize Lecture, American Physical Society, Division of Atomic, Molecular, and Optical Physics (DAMOP) Annual meeting, Calgary, Alberta, Canada, June 5 – 9, 2007. *Bulletin Am. Phys. Soc.* 52, pp. 12.
190. A. D. Ludlow, M. M. Boyd, T. Zelevinsky, S. Blatt, S. M. Foreman, G. Campbell, and J. Ye, "Highly stable and accurate Sr lattice clock," 388. WE-Heraeus-Seminar "Atomic Clocks and Fundamental Constants", Physikzentrum, Bad Honnef, Germany, June 3 – 7, 2007.

191. M. M. Boyd, G. Campbell, A. D. Ludlow, T. Zelevinsky, S. Blatt, S. M. Foreman, and J. Ye, "Optical lattice clock," "From Quantum to Cosmos II: Space-based Research in Fundamental Physics and Quantum Technologies" Bremen, Germany, June 10 – 13, 2007.
192. J. Ye, "<sup>87</sup>Sr Optical Lattice Clock," Colloquium, Physikalisch-Technische Bundesanstalt (PTB), Braunschweig, Germany, June 18, 2007.
193. J. Ye, "Application of femtosecond frequency combs," Presentation of the Carl Zeiss Research Award 2007, International Congress Center, Munich, Germany, June 20, 2007.
194. J. Ye, "Ultracold Strontium atoms in an Optical Lattice – Quantum Measurement and Clock," 18th International Conference on Laser Spectroscopy (ICOLS-07), Telluride, Colorado, June 24 – 30, 2007.
195. J. Ye, "Experiments on the variation of fundamental constants – Lecture I: Light-based precision measurement with ultracold atoms," and "Lecture II: Cold molecules and precision measurement," Course on QUANTUM ENGINEERING WITH COLD ATOMS FOR LAB AND MICRO-G PHYSICS TESTS, International School of Physics "Enrico Fermi", Italian Physical Society, Varenna, Italy, July 3 – 13, 2007.
196. J. Ye, "The art of light-based precision measurement," Colloquium, University of Hannover, Germany, July 18, 2007.
197. I. Hartl, A. Marcinkevicius, M. E. Fermann, T. R. Schibli, D. D. Hudson, D. C. Yost, and J. Ye, "Xe Plasma Generated by a Cavity Enhanced Yb-Similariton Laser Based Fiber Frequency Comb," Nonlinear Optics: Materials, Fundamentals, and Applications (OSA Topical Meeting), Kona, Hawaii, July 30 – August 3, 2007. (Paper ThB3)
198. J. Ye, "Coherent control applied to cold molecules," International Workshop on Coherent Control of Ultracold Molecular Processes, University of British Columbia, Vancouver, August 1 – 4, 2007.
199. J. Ye, "Ultracold Sr atoms – quantum measurement and optical atomic clock," and "Ultracold polar molecules," Summer School on Experimental Cold Atomic & Molecular Physics, Shanghai, China, July 29 – Aug. 10, 2007.
200. T. R. Schibli and J. Ye, "Femtosecond enhancement cavity and XUV frequency comb," International Laser Physics Workshop (LPHYS'07), Leon, Mexico, August 20 – 24, 2007.
201. G. K. Campbell, M. M. Boyd, A. D. Ludlow, T. Zelevinsky, S. Blatt, S. M. Foreman, T. Zanon, and J. Ye, "Ultra-high resolution spectroscopy with a <sup>87</sup>Sr optical lattice clock," SPIE Optics + Photonics 2007, San Diego, California, August 26 – 30, 2007. [6673-11, Proceedings p. 88]
202. S. M. Foreman, A. D. Ludlow, M. M. Boyd, S. Blatt, T. Zelevinsky, G. K. Campbell, J. Ye, J. E. Stalnaker, and S. A. Diddmas, "Frequency and timing transfer for an <sup>87</sup>Sr optical clock," SPIE Optics + Photonics 2007, San Diego, California, August 26 – 30, 2007. [6673-17, Proceedings p. 89].
203. A. Pe'er and J. Ye, "Comb-based coherent control in cold molecules," Conference on Laser Frequency Comb and Coherent Control, Brijuni, Croatia, August 26 – 31, 2007.
204. M. J. Thorpe and J. Ye, "Ultrasensitive, wide-bandwidth trace detection," Conference on Laser Frequency Comb and Coherent Control, Brijuni, Croatia, August 26 – 31, 2007.

205. A. D. Ludlow and J. Ye, "Narrow linewidth laser and Sr lattice clocks at JILA," 2nd ESA International Workshop on Optical Atomic Clocks, ESA/ESRIN, Frascati, Rome, Italy, October 10 – 12, 2007.
206. S. M. Foreman and J. Ye, "Remote transfer of ultrastable frequency references via fiber networks," 2nd ESA International Workshop on Optical Atomic Clocks, ESA/ESRIN, Frascati, Rome, Italy, October 10 – 12, 2007.
207. J. Ye, "The art of light-based precision measurement," Colloquium, University of Georgia, Athens, Georgia, November 1, 2007.
208. J. Ye, "Quantum metrology with precision light and ultracold atoms," Colloquium, Pennsylvania State University, University Park, Pennsylvania, December 13, 2007.
209. J. Ye, "Quantum metrology with precision light and ultracold atoms," Colloquium, California Institute of Technology, Pasadena, California, January 17, 2008.
210. M. M. Boyd, A. D. Ludlow, T. Zelevinsky, S. M. Foreman, S. Blatt, G. K. Campbell, T. Zanon, M. H. Miranda, M. Martin, and J. Ye, "Neutral atom optical clock with high precision and accuracy," OPTO 2008, SPIE Photonics West, San Jose, California, January 19 – 24, 2008. (Invited paper 6906-16)
211. J. Ye, "Science with ultracold molecules," Plenary Lecture, Winter School of Asian Core Program, Okazaki, Japan, January 24 – 26, 2008.
212. J. Ye, "Art of control in the light-matter interactions," DARPA DSO Overview, Keswick Hall, Charlottesville, Virginia, January 29, 2008.
213. J. Ye, "The Sr optical atomic clock," Colloquium, Harvey Mudd College, Claremont, California, February 19, 2008.
214. S. Ospelkaus, A. Pe'er, K.-K. Ni, J. J. Zirbel, B. Neyenhuis, S. Kotochigova, P. S. Julienne, D. S. Jin, and J. Ye, "Precision quantum control for ultracold polar molecules," Batsheva de Rothschild Seminar on Ultracold – Ultrafast Processes, Ein Gedi, Dead Sea, Israel, February 24 – 29, 2008.
215. J. Ye, "Precision quantum metrology with lattice-confined ultracold atoms," Collège de France Seminar, Paris, March 3, 2008.
216. J. Ye, "Cold and ultracold polar molecules," Focus Session on Photophysics of Cold Molecules, American Physical Society Spring Meeting, New Orleans, Louisiana, March 10 – 14, 2008. Program Guide pp. 202.
217. M. J. Martin and J. Ye, "An introduction to noise in cavity-based laser frequency stabilization," Optical Coating Workshop, California Institute of Technology, Pasadena, CA, March 20 – 21, 2008.
218. J. Ye, "Precise control of light and matter for precision measurement," Colloquium, University of Arizona, Tucson, Arizona, March 27, 2008.
219. S. Blatt and J. Ye, "Laboratory measurements of time variations of  $\alpha$  and  $m_e/m_p$ ," Workshop on "Atomic and Molecular Physics of the Early Universe", ITAMP, Harvard University, March 31 – April 2, 2008.

220. J. Ye, "Precision Quantum Metrology and Optical Atomic Clock," Workshop on "Coherence, squeezing and entanglement for precision measurements with quantum gases," Levico Terme (Trento), Italy, April 3 – 5, 2008.
221. J. Ye, "Cold and ultracold polar molecules," Cold Quantum Matter (EuroQUAM) Inauguration Conference, Barcelona, Spain, April 7 – 9, 2008. (Keynote talk)
222. A. D. Ludlow and J. Ye, "Sr optical lattice clock," NIST Time and Frequency Division monthly seminar, Boulder, Colorado, April 17, 2008.
223. F. Adler, M. J. Thorpe, K. C. Cossel, and J. Ye, "Tomography of a Supersonically Cooled Molecular Jet by Direct Frequency Comb Spectroscopy," Quantum Electronics and Laser Science Conference, CLEO/QELS 2008, San Jose, California, May 4 – 9, 2008. (postdeadline paper, QPDA1)
224. D. C. Yost, T. R. Schibli, and J. Ye, "Overcoming the Power Scalability Limit in Intracavity HHG," Conference on Lasers and Electro-Optics, CLEO/QELS 2008, San Jose, California, May 4 – 9, 2008. (postdeadline paper, CPDA10)
225. J. Ye, "Precision quantum metrology," Quantum Seminars, Quantum Institute, Los Alamos National Laboratory, Los Alamos, New Mexico, May 15, 2008.
226. A. D. Ludlow and J. Ye, "Sr optical lattice clock," 2008 IEEE International Frequency Control Symposium, Honolulu, Hawaii, May 19 – 21, 2008.
227. S. Ospelkaus, A. Pe'er, K.-K. Ni, J. J. Zirbel, B. Neyenhuis, S. Kotochigova, P. S. Julienne, J. Ye, and D. S. Jin, "Ultracold dense gas of heteronuclear deeply bound molecules," 39<sup>th</sup> Annual Meeting of the Division of Atomic, Molecular & Optical Physics (DAMOP), American Physical Society, State College, Pennsylvania, May 27 – 31, 2008. (K2 1) Bulletin Am. Phys. Soc. 53, No.7, pp. 76.
228. J. W. Thomsen, G. K. Campbell, A. D. Ludlow, S. Blatt, M. J. Martin, T. Zelevinsky, T. Zanon, M. M. Boyd, and J. Ye, "Strontium Optical Lattice Clock with high Accuracy and Stability," Conference on Precision Electromagnetic Measurements (CPEM 2008), Broomfield, Colorado, June 8 – 13, 2008.
229. J. Ye, "Art of light-based precision measurement," "Optical lattice of Sr," "Cold and Ultracold molecules," Quantum Foundations and Quantum Information Summer School, Ann Arbor, Michigan, June 16 – 28, 2008.
230. J. Ye, "Optical Atomic Clocks," IdeaCity08 – *Ideas Change the World*, Toronto, Canada, June 18 – 20, 2008.
231. J. Thomsen, S. Blatt, G. Campbell, A. D. Ludlow, M. J. Martin, T. Zelevinsky, M. M. Boyd, and J. Ye, "High accuracy <sup>87</sup>Sr optical lattice clock for laboratory measurements of  $\alpha$  variation," *From Quantum to Cosmos III: Space-Based Research in Fundamental Physics for the Next Decade*, Airlie Center, Virginia, July 6 – 10, 2008.
232. J. Ye, "Polar molecules – a new frontier for ultracold matter," The 3rd International Symposium on Cold Atom Physics (ISCAP-III), Wuhan Institute of Physics and Mathematics (WIPM), Chinese Academy of Sciences (CAS), July 10 – 12, 2008.
233. J. Ye, "Measurement of time-variation of physical constants," Precision Measurement – Physics and Methods, XiangShan Meeting, Wuhan, July 13 – 15, 2008.

234. J. W. Thomsen, S. Blatt, G. Campbell, A. D. Ludlow, M. J. Martin, T. Zelevinsky, M. M. Boyd, and J. Ye, "High accuracy  $^{87}\text{Sr}$  atomic lattice clock for laboratory measurements of alpha variation," Workshop, *In search of variation of fundamental couplings and mass scales*, Perimeter Institute for Theoretical Physics, Waterloo, Canada, July 14 – 18, 2008.
235. J. Ye, "Precision measurement, Part I and Part II," Summer School for the 21st International Conference on Atomic Physics (ICAP 2008), Cambridge, Massachusetts, July 20 – 25, 2008.
236. J. Ye, "Quantum metrology with ultracold strontium," XXI International Conference on Atomic Physics (ICAP 2008), Storrs, Connecticut, July 27 – August 1, 2008.
237. G. K. Campbell and J. Ye, "Sr optical atomic clock," International Union of Radio Science (URSI) 2008 General Assembly, Oral Presentations Program, Chicago, August 07 – 16, 2008.
238. T. Zelevinsky, G. K. Campbell, S. Blatt, A. D. Ludlow, M. M. Boyd, M. J. Martin, J. Thomsen, and J. Ye, "Strontium Optical Lattice Clock," Fifth International Symposium "Modern Problems of Laser Physics", Akademgorodok, Novosibirsk, Russia, August 24 – 30, 2008.
239. D. C. Yost and J. Ye, "Phase-coherent high power fiber-laser based optical frequency combs," 3rd EPS-QEOD EUROPHOTON CONFERENCE, Special Symposium "Extreme light sources in measurement and sensing", Paris, France, August 31 – September 5, 2008.
240. J. Ye, "Optical clocks and applications," Stanford Photonics Research Center Symposium, Stanford University, September 15 – 17, 2008. (Plenary Talk)
241. J. Ye, "Precision quantum metrology," Physics & Applied Physics Colloquium, Stanford University, Palo Alto, California, September 30, 2008.
242. J. Ye, "Quantum metrology with lattice-confined ultracold Sr atoms," 7th Symposium on Frequency Standards and Metrology, Asilomar, Pacific Grove, California, October 5 – 11, 2008.
243. J. Ye, "Optical atomic clocks," AVS 55<sup>th</sup> International Symposium & Exhibition, Industrial Physics Forum (American Institute of Physics,), Boston, Massachusetts, October 19 – 21, 2008.
244. J. Ye, "Ultracold polar molecules," Colloquium, MIT, Cambridge, MA, Oct. 23, 2008.
245. J. Ye, "Cold and ultracold molecules," Laser Science XXIV Conference/OSA Annual meeting, Rochester, New York, October 19 – 24, 2008.
246. J. Ye, "Atoms in a chain – a new time keeper," JILA Colloquium, November 11, 2008.
247. J. Ye, "Quantum metrology at the highest precision," Colloquium, Centre for Quantum Technologies, National University of Singapore, Singapore, December 2, 2008.
248. J. Ye, "Ultracold polar molecules," 14th Laser Science Workshop, Guangzhou, December 4 – 7, 2008.
249. J. Ye, "Cold molecules," Colloquium, East China Normal University, Shanghai, Dec. 8, 2008.

250. J. Ye, "Ultracold Sr atoms in optical lattice – from precision metrology to quantum information science," ITAMP WORKSHOP, "Non-equilibrium dynamics and correlations in strongly interacting atomic, optical and solid state systems" Cambridge, Massachusetts, January 26 – 28, 2009.
251. J. Ye, "Cold molecules and spectroscopy," R. B. Woodward Lecture in the Chemical Sciences/Physical Chemistry, Harvard University, Cambridge, January 29, 2009.
252. J. Ye, "Cold molecules and spectroscopy," Physical Chemistry Seminar, University of California, Berkeley, CA, February 10, 2009.
253. J. Ye, "Quantum metrology with ultracold atoms," Physics Colloquium, ETH Zürich, March 4, 2009.
254. S. Ospelkaus, K.-K. Ni, M. H. G. de Miranda, B. Neyenhuis, D. Wang, S. Kotochigova, P. S. Julienne, D. S. Jin, and J. Ye, "Ultracold polar molecules near quantum degeneracy," American Physical Society March Annual Meeting, Pittsburgh, PA, March 16 – 20, 2009.
255. J. Ye, "Cold and ultracold molecules," Colloquium, University of Toledo, Toledo, Ohio, March 26, 2009.
256. J. Ye, "Precision quantum metrology and optical atomic clock," Niels Bohr Lecture, Niels Bohr Institute, University of Copenhagen, Denmark, April 15, 2009.
257. J. Ye, "Ultracold polar molecules near quantum degeneracy," Faraday Discussion 142: Cold and Ultracold Molecules, Durham University, United Kingdom, April 15 – 17, 2009.
258. J. Ye, "Cold and ultracold polar molecules," Cold Quantum Matter (EuroQUAM) Conference, Durham, United Kingdom, April 18, 2009.
259. M. D. Swallows and J. Ye, "Sr optical lattice clock – precision measurement of fermionic collisions," European Frequency and Time Forum & International Frequency Control Symposium (EFTF-IFCS 2009 Joint Conference), Besancon, France, April 20 – 24, 2009.
260. J. Ye, "Quantum metrology with ultracold atoms," Colloquium, Ohio State University, Columbus, Ohio, May 12, 2009.
261. K.-K. Ni, S. Ospelkaus, D. Wang, M. Miranda, B. Neyenhuis, A. Pe'er, J. Zirbel, S. Kotochigova, P. Julienne, J. Bohn, J. Ye, and D. Jin, "Ultracold polar molecules," 40<sup>th</sup> Annual Meeting of the Division of Atomic, Molecular & Optical Physics (DAMOP), American Physical Society, Charlottesville, Virginia, May 19 – 23, 2009. (Q1 1) Bulletin Am. Phys. Soc. 54, No.7, pp. 99.
262. M. J. Martin and J. Ye, "Optical atomic clocks for space applications," Space-Time Anisotropy Tests (STAT) Workshop, Stanford University, Palo Alto, California, May 28 – 29, 2009.
263. F. Adler, K. C. Cossel, M. J. Thorpe, I. Hartl, M. E. Fermann, and J. Ye, "Phase-stabilized, 1.5-W mid-infrared frequency comb," Conference on Lasers and Electro-Optics and International Quantum Electronics Conference, CLEO/QELS 2009, Baltimore, Maryland, May 31 – June 5, 2009. (postdeadline paper, CPDA9)
264. J. Ye and D. S. Jin, "Ultracold molecules," 19th International Conference on Laser Spectroscopy (ICOLS09), Kussharo Hokkaido, Japan, June 7 – 13, 2009.

265. K. C. Cossel, F. Adler, M. J. Thorpe, and J. Ye, "Phase-stabilized, 1.5-W frequency comb at 2.8 to 4.8  $\mu\text{m}$ ," Middle Infrared Coherent Sources (MICS'2009), Trouville, France, June 8 – 12, 2009.
266. J. Ye, "Precision quantum metrology and optical clocks," The Nordic Physical Societies, First Common Meeting, Copenhagen, Denmark, June 16 – 18, 2009. (Plenary Talk)
267. J. Ye, "Cold and ultracold polar molecules," Seminar, Physikalisch-Technische Bundesanstalt (PTB), Braunschweig, Germany, June 19, 2009.
268. J. Ye, "Precision measurement with ultracold atoms," OSA Traveling Lecture, Humboldt University, Berlin, Germany, June 22, 2009.
269. J. Ye, "Cavity-enhanced direct frequency comb spectroscopy," 2009 Ohio State University International Symposium on Molecular Spectroscopy, Columbus, Ohio, June 22–26, 2009.
270. B. Sawyer and J. Ye, "Cold molecule collisions," Kyoto Workshop on Cold/Ultracold Molecules and Field Effects, Kyoto, Japan, June 22 – 26, 2009.
271. J. Ye, "Cold and ultracold polar molecules," 2009 Atomic Physics Gordon Research Conference, Tilton, New Hampshire, June 28 – July 3, 2009.
272. D. C. Yost and J. Ye, "Interference of quantum trajectories in high harmonic generations," SIAM (Society for Industrial and Applied Mathematics) Annual Meeting, Denver, Colorado, July 6 – 10, 2009.
273. S. Ospelkaus, K.-K. Ni, M. H. G. de Miranda, B. Neyenhuis, D. Wang, G. Quéméner, J. Bohn, J. Ye, and D. S. Jin, "Dipolar collisions in a quantum gas of polar molecules," Cold Molecules Workshop, JILA, Boulder, Colorado, July 15 – 17, 2009.
274. J. Ye, "Coherent frequency combs and spectroscopy – from far IR to XUV," Second International Conference on Attosecond Physics, Manhattan, Kansas, July 28 – August 1, 2009. (Overview talk)
275. J. Ye, "Precision Quantum Metrology and Cold Molecules," The 6th joint meeting of Chinese Physicists Worldwide (OCPA6) – International Conference on Physics Education and Frontier Physics Research, Lanzhou, China, August 3 – 7, 2009. (Plenary Talk)
276. D. C. Yost and J. Ye, "XUV frequency comb," Ultrafast Optics/High Field Short Wavelength, Arcachon, France, August 31 – September 4, 2009. (Plenary Talk)
277. J. Ye and D. S. Jin, "Dipolar molecular gas near quantum degeneracy," BEC 2009 Conference (Bose-Einstein Condensation 2009: Frontiers in Quantum Gases), Sant Feliu de Guixols (Costa Brava), Spain, September 5 – 11, 2009.
278. G. K. Campbell and J. Ye, "Precision measurement of fermionic collisions with an  $^{87}\text{Sr}$  optical lattice clock," Workshop on Ultracold Group II Atoms: Theory and Applications, Joint Quantum Institute, University of Maryland, September 17 – 19, 2009.
279. D. S. Jin and J. Ye, "Polar molecules near quantum degeneracy," The Kavli Institute for Theoretical Physics China (KITPC), Chinese Academy of Sciences, Research Program, *Condensed Matter Physics of Cold Atoms: Cold molecules and quantum dipolar gases*, Beijing, October 19 – 23, 2009.

280. J. Ye, "Precision Quantum Metrology," Colloquium, Rice University, Houston, Texas, November 18, 2009.
281. J. Ye, "Polar molecules near quantum degeneracy," Colloquium, University of California at Berkeley, November 30, 2009.
282. J. Ye, "Frequency combs and ultrahigh precision measurement," OSA Traveling Lecture, University of Maryland, Baltimore County, Baltimore, Maryland, December 14, 2009.
283. J. Ye and D. S. Jin, "Polar molecules – dipolar collisions and ultracold chemistry," The 40th Winter Colloquium on the Physics of Quantum Electronics, Snowbird, Utah, January 3 – 7, 2010. (Plenary Talk)
284. M. J. Martin and J. Ye, "Sr optical lattice clock," International Conference on Cold Ions and Atoms, Vedic Village, Kolkata, India, January 18 – 21, 2010.
285. J. Ye, "Ultracold dipolar molecules," Colloquium, Physics Department, University of Illinois at Urbana-Champaign, Urbana, IL, February 17, 2010.
286. J. Ye, "Direct frequency comb spectroscopy," Focus Session on *New Trends in Spectroscopy*, American Physical Society March meeting, Portland, March 15 – 19, 2010.
287. D. S. Jin and J. Ye, "Ultracold Chemistry," American Physical Society March Meeting, Press Conferences, Portland, Oregon, March 15 – 19, 2010.
288. J. Ye, "Coherent frequency combs and spectroscopy – from far IR to XUV," The 239th National Meeting of the American Chemical Society, Symposium of *Measuring and manipulating condensed phase chemistry in time and frequency: Celebrating 50 years of the laser*, San Francisco, California, March 21 – 25, 2010.
289. J. Ye, "Quantum gas of polar molecules," Colloquium, Physics Department, University of California at Los Angeles (UCLA), April 1, 2010.
290. J. Ye, "Cold and Ultracold Polar Molecules," Jet Propulsion Laboratory, California Institute of Technology, Pasadena, California, April 12, 2010.
291. J. Ye, "Polar molecules in the quantum regime," Workshop, *Coherence in Ultracold Molecular Physics*, University of British Columbia, Vancouver, May 20 – 23, 2010.
292. J. Ye, "Coherent frequency combs and spectroscopy," 2010 Annual Meeting of the Division of Atomic, Molecular & Optical Physics (DAMOP), American Physical Society, Houston, Texas, May 25 – 29, 2010. *Bulletin Am. Phys. Soc.* **55**, No. 5, p. 64 (2010).
293. J. Ye, "Precision Quantum Metrology & Optical Clocks," Graduate Student Symposium – Celebrating the 50th anniversary of laser, 41<sup>st</sup> Annual Meeting of the Division of Atomic, Molecular & Optical Physics (DAMOP), APS, Houston, May 25 – 29, 2010.
294. D. Meiser, J. Ye, and M. J. Holland, "Prospects for milli-hertz linewidth lasers using collective emission," 2010 IEEE International Frequency Control Symposium (IFCS), Newport Beach, California, June 1 – 4, 2010.
295. J. Ye, "VUV and XUV frequency combs," 2010 Gordon Research Conference on Multiphoton Processes, Tilton School, Tilton, New Hampshire, June 6 – 11, 2010.

296. D. Wang, D. Jin, and J. Ye, "Quantum gas of polar molecules," 2010 Annual Los Alamos Center for Nonlinear Studies Conference: *Complexity and Disorder at Ultra-low Temperatures*, Santa Fe, New Mexico, June 21 – 25, 2010.
297. J. Ye, "Precision Quantum Metrology and many-body physics," The 4th International Symposium on Cold Atom Physics (ISCAP-IV), Zhoushan, China, July 5 – 8, 2010.
298. D. Felinto and J. Ye, "Direct frequency comb spectroscopy," Latin America Optics and Photonics Conference (LAOP), Recife, Brazil, September 27 – 30, 2010.
299. T. Allison, D. C. Yost, A. Cingöz, A. Ruel, and M. E. Fermann, I. Hartl, and J. Ye, "The Extreme Ultraviolet Frequency Comb and Prospects for X-ray Combs," Workshop on Evolution and Control of Complexity: Key Experiments Using Sources of Hard X-rays, The Advanced Photon Source/Argonne National Laboratory, October 11 – 13, 2010.
300. J. Ye, "Polar molecules in the quantum regime," Kavli Institute for Theoretical Physics Conference: *Frontiers of Ultracold Atoms and Molecules*, Santa Barbara, October 11 – 15, 2010.
301. J. Ye, "Optical clock with collisional shift at  $10^{-17}$ ," NASA ISS (International Space Station) Workshop on Fundamental Physics, Dana Point, California, Oct. 13 – 15, 2010.
302. J. Ye, "Optical clock with lattice-confined Sr atoms," Optical Society of America Annual Meeting: Frontiers in Optics 2010, Rochester, New York, October 24 – 28, 2010.
303. J. Ye, "Polar molecules - dipolar collisions and ultracold chemistry," Physics and Mathematics Colloquium, University of New Mexico, October 29, 2010.
304. J. Ye, "Polar molecules in the quantum regime," Physics Colloquium, University of Delaware, November 3, 2010.
305. J. Ye, "Precision quantum metrology and optical atomic clock," Physics Colloquium, Michigan State University, November 4, 2010.
306. J. Ye, "Molecular quantum gas," Department of Chemistry, Princeton University, November 23, 2010.
307. J. Ye, "Molecules in the quantum regime," 15th Laser Science Workshop, Hainan, December 1 – 5, 2010.
308. B. Neyenhuis, D. Jin, and J. Ye, "Quantum gas of polar molecules," 2010 International Chemical Congress of Pacific Basin Societies (Pacifichem), Honolulu, Hawaii, December 15 – 20, 2010.
309. J. Ye, "Suppression of clock shifts at  $1E-17$  due to strong-interactions," International Conference on Ultracold Atoms and Molecules (ERATO Macroscopic Quantum Control), University of Tokyo, January 24 – 26, 2011.
310. J. Ye, "Molecules in the quantum regime," Quantum Optics and New Materials (IV), Beijing Computational Science Research Center, Beijing, January 26 – 30, 2011.
311. J. Ye, "Polar molecules in the quantum regime," Department of Chemistry, California Institute of Technology, February 15, 2011.

312. A. Ruehl, M. E. Fermann, I. Hartl, A. Cingöz, D. C. Yost, and J. Ye, "High Power Fiber Laser Frequency Combs for XUV Spectroscopy," Optical Society of America, Fiber Laser Applications (FILAS), Istanbul, Turkey, February 16 – 17, 2011.
313. J. Ye, "Cold molecules," Lectures in Modern Chemistry Series, University of British Columbia, Simon Fraser University, and University of Victoria, March 7, 8, & 9, 2011.
314. J. Ye, "A strongly interacting optical lattice clock," The Optical Society of America Boulder Chapter, University of Colorado, March 17, 2011.
315. J. Ye, "New opportunities for precision spectroscopy," Faraday Discussions on "Frontiers in Spectroscopy" University of Basel, Switzerland, April 6 – 8, 2011.
316. J. Ye, "Dipolar quantum matter," IFRAF-Fermi Mixture Workshop, École Normale Supérieure, Paris, April 13 – 15, 2011.
317. J. Ye, "Suppression of collisional shifts in a strongly interacting lattice clock," Joint IEEE International Frequency Control Symposium (IFCS) and European Frequency and Time Forum (EFTF), San Francisco, California, May 1 – 5, 2011.
318. J. Ye, "Frequency comb spectroscopy – from IR to XUV," OSA/SPIE Student Chapter, Stanford University, Stanford, California, May 5, 2011.
319. P. Masłowski, A. Foltynowicz-Matyba, F. Adler, K. C. Cossel, T. C. Briles, T. Ban, and J. Ye, "Mid-infrared frequency comb spectroscopy," Conference on Lasers and Electro-Optics (CLEO), Baltimore, Maryland, May 2 – 6, 2011.
320. J. Ye, "Molecules in the quantum regime," 66th OSU International Symposium on Molecular Spectroscopy, Columbus, Ohio, June 20 – 24, 2011. (Plenary)
321. A. Foltynowicz-Matyba and J. Ye, "Cavity-enhanced optical frequency comb spectroscopy," Cavity Enhanced Spectroscopy Conference, Kingston, Canada, June 26 – 29, 2011. (Plenary)
322. J. Ye, "Frequency combs and spectroscopy - from IR to XUV," Extreme Photonics Summer School, Ottawa, Canada, June 24 – 30, 2011.
323. J. Ye, "Quantum metrology with ultracold atoms – a strongly interacting optical lattice clock," The Forty Third Conference of the European Group on Atomic Systems (EGAS), Fribourg, Switzerland, June 28 – July 2, 2011. (Plenary Talk)
324. J. Ye, "Molecular collisions and reactions in the quantum regime," Dynamics of Molecular Collisions Conference, Snowbird, Utah, July 10 – 15, 2011.
325. J. Ye, "Frequency combs from mid-IR to XUV," OSA Topical Meeting on Nonlinear Optics, Kaua'i Marriott resort, Lihue-Kauai, Hawaii, July 17 – 22, 2011.
326. J. Ye, "Coherent control techniques for cold molecules," Gordon Research Conference on Quantum Control of Light and Matter, Mt. Holyoke College, Massachusetts, July 31 – August 5, 2011.
327. J. Ye, "Quantum metrology – optical atomic clocks and many-body physics," International Conference on Quantum Electronics/Conference on Lasers and Electro-Optics Pacific Rim (IQEC/CPR 2011), Sydney, Australia, August 29 – September 1, 2011. (Plenary)

328. J. Ye, "Cold bi-molecule dipolar collisions," Conference on Molecular Energy Transfer (COMET), Oxford University, UK, September 11 – 16, 2011.
329. A. Foltynowicz-Matyba and J. Ye, "Frequency comb spectroscopy and applications," Field Laser Applications in Industry and Research (FLAIR) Conference, Murnau Germany, September 13 – 17, 2011.
330. J. Ye, "Optical frequency combs - from infrared to extreme ultraviolet," Joint Seminar Series at Lund Laser Centre (LLC), "Quantum metrology with ultracold atoms - Optical atomic clocks," Physics Colloquium, Lund University, Sweden, November 14 – 15, 2011.
331. J. Ye, "Ultracold matter and quantum metrology," OSA Traveling Lecture, OSA Student Chapter of the Autonomous University of San Luis Potosi, Mexico, November 23, 2011.

## Contributed Presentations and Conference Papers:

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2. H. Li, J. Ye, and J. G. McInerney, "Influence of noise on deterministic chaos in a coherence-collapsed semiconductor laser," *Optical Society of America 1991 Annual Meeting, Advance Program*, p. 102, San Jose, California, November 3-8, 1991.
3. J. Ye, H. Li, and J. G. McInerney, "Period-doubling route to chaos in a coherence-collapsed semiconductor laser," *Conference on Lasers and Electro-Optics, CLEO Tech. Digest 12*, p. 604, Anaheim, California, May 12-14, 1992.
4. H. Li, J. Ye, J. G. McInerney, J. Park, and D. Seo, "Nonlinear dynamics of double external-cavity semiconductor lasers," *Conference on Lasers and Electro-Optics, CLEO Tech. Digest 12*, p. 128, Anaheim, California, May 12-14, 1992.
5. H. Li, J. Ye, and J. G. McInerney, "Chaos in semiconductor lasers," *Nonlinear Dynamics in Optical Systems, Alpbach, Austria*, June 22-26, 1992.
6. P. Jungner, S. Swartz, M. Eickhoff, J. Ye, J. L. Hall, and S. Waltman, "Absolute frequency measurement of molecular iodine transitions near 532 nm," *International Quantum Electronics Conference, IQEC Tech. Digest 9*, p. 58, Anaheim, California, May 8 - 13, 1994.
7. P. Dubé, L.-S. Ma, J. Ye, P. Jungner, and J. L. Hall, "Thermally-induced self-locking by overtone absorption from acetylene gas in an external optical cavity," *Optical Society of America 1994 Annual Meeting, Advance Program*, P73, Dallas, Texas, October 2-7, 1994.
8. L.-S. Ma, P. Dubé, P. Jungner, J. Ye, and J. L. Hall, "Saturation spectroscopy of molecular overtones for laser frequency standards in the visible and the near-visible domains," *Quantum Electronics and Laser Science Conference, QELS'95 Tech. Digest*, p.18, Baltimore, Maryland, May 21 - 26, 1995.
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10. J. Ye, L.-S. Ma, and J. L. Hall, "Ultrasensitive molecular overtone spectroscopy and its application for optical frequency metrology," *Metrology and Fundamental Physical Constants, Workshop - Spring School, Les Houches, France*, June 3-7, 1996.
11. J. Ye, L.-S. Ma, and J. L. Hall, "Ultra-stable optical frequency reference at 1.064  $\mu\text{m}$  using a  $\text{C}_2\text{HD}$  molecular overtone transition," *Conference on Precision Electromagnetic Measurements, PTB, Braunschweig, Germany*, June 17-20, 1996.
12. T. M. Niebauer, L. Robertsson, G. Sasagawa, J. Ye, J. Faller, and J. L. Hall, "Absolute gravity measurements using a highly stabilized doubled-YAG laser interferometer," *Conference on Measurements of Gravitational Constants, Orlando, Florida*, March 20 - 26, 1997.
13. J. L. Hall, J. Ye, and L.-S. Ma, "Advances in laser stabilization and sensitive detection," *Optical Society of America 1997 Annual Meeting, Program* p. 118, Long Beach, California, October 12-17, 1997.

14. H. Mabuchi, Q. Turchette, J. Ye, and H. J. Kimble, "Real-time tracking of an individual atom's motion in the quantum-measurement regime," Optical Society of America 1997 Annual Meeting, Program p. 111, Long Beach, California, October 12-17, 1997.
15. C. J. Hood, T. W. Lynn, M. S. Chapman, H. Mabuchi, J. Ye, and H. J. Kimble, "Cavity QED – Where's the Q?" Proceedings of Quantum Optics and Applications of Microcavities and Photonic Crystals, Cargese, Corsica, France, August, 1998.
16. S. A. Diddams, L.-S. Ma, J. L. Hall, and J. Ye, "A broadband optical frequency comb generator with parametric gain," Conference on Lasers and Electro-Optics, CLEO '99 Tech. Digest, p. 228, Baltimore, Maryland, May 23 - 28, 1999.
17. M. L. Silva, R. W. Field, J. Ye, L.-S. Ma, and J. L. Hall, "Precision measurement of the (211) band of H<sub>2</sub>O using noise-immune cavity enhanced optical heterodyne molecular spectroscopy," Quantum Electronics and Laser Science Conference (QELS), May, 2000.
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- Thirteenth International Conference on Ultrafast Phenomena, Technical Digest, p. 12, Vancouver, Canada, May 12-17, 2002.
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