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,
Boulder, Colorado 80309-0440 (Web http://jila.colorado.edu/Yelabs/)
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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
Gold Medal (joint with Deborah Jin), U.S. Department of Commerce, 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 Wilhem Bessel Research Award, Alexander von Humboldt Foundation, Germany, 2006
Elected Fellow, Optical Society of America, 2006
First Prize (Technology Innovations), Amazing Light: Vision for Discovery (C. 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
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

Kent R. Wilson Lecture in Physical Chemistry, Univ. California San Diego, 2012
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
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 of Scientific Advisory Boards: MPQ, Garching; Caltech; CUA (MIT/Harvard); CQT, National Singapore Univ.; National Institute of Metrology.
Program Committee, ICAP 2012; Committee, OSA Meggers Award
Director at Large, OSA, 2012-2015

Publications and Presentations

374 invited talks (Colloquia, Keynote Speeches, Invited Conference Talks, and Seminars)
266 published papers in refereed journals, edited books, and proceedings
10013 citations (ISI Web of Science/Knowledge); H-index, 54; Average citations, 50
2 edited books; 2 edited conference proceedings and special issues; 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, T. Ban, P. Masłowski, A. Chotia, Y. Xia, A. Cingöz, M. Hummon, A. Foltynowicz, T. Allison, J. Williams, B. Yan, A. J. Fleisher, W. Zhang, B. Gadway, X. Zhang
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, D. Yost, B.K. Stuhl, E.H. Yeo, M.J. Martin, M. Miranda, K. Cossel, T.L. Nicholson, M. Bishof, B. Bloom, S. Moses, C. Benko, S. Campbell, J. Covey, B. Bjork, A. Collopy, H. Wu, D. Reens
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 x 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 μm via ultrasensitive cavity enhanced FM spectroscopy of C_2HD 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}Rb $5P_{3/2}$ 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 μm using a C_2HD 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 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 $^{127}I_2$-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 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 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). (Selected for a Focus in *Physics*; Phys. Rev. Lett. Milestone.)

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).

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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).

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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).

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76. X.-Y. Xu, T. H. Loftus, M. Smith, J. L. Hall, A. Gallagher, and J. Ye, "Dynamics in a two-level atom magneto-optic trap," Phys. Rev. A **66**, Rapid Comm., 011401 (R) (2002).

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"Ultrasensitive laser spectroscopy and its applications to fundamental physics,"
"Trapping and tracking of single atoms and real time quantum dynamics," Bai-Yu-Lan Lecture Series, East China Normal University, FuDan University, and Jiao Tong University, Shanghai, China, December 26-28, 2000.

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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)

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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.

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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.

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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.

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75. J. Ye, "Control of coherent light: (precision-) frequency meets (ultrafast-) time," Physics Colloquium, California Institute of Technology, Pasadena, California, December 4, 2003.

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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.

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86. J. Ye, "Control of coherent light and its applications to molecular spectroscopy," International Symposium on Molecular Spectroscopy, 59th 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.

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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)

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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.

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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.

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117. J. Ye, "Uniting ultrafast, ultracold and ultraprecision," 2005 Chinese Physical Society Annual Meeting, Wuhan, China, September 18 – 21, 2005. (Conference Plenary)

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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.

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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}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," 20th 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.

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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 x 10^{13} W/cm^2 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, “^{87}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 ^{87}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 ^{87}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 α 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," 39th 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 ^{87}Sr optical lattice clock for laboratory measurements of α 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}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 55th 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," 40th 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, Pala 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), Kusshаro 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 μm," 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 Bundeanstalt (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}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, 41st 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, 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 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-43), Fribourg, Switzerland, June 28 – July 2, 2011. (Plenary Talk, pp.02)

324. T. Ban, A. Foltynowicz, P. Maslowski, D. Aumiler, G. Pichler, and J. Ye, "Direct frequency comb spectroscopy: time and frequency domain approach," The Forty Third Conference of the European Group on Atomic Systems (EGAS-43), Fribourg, Switzerland, June 28 – July 2, 2011. (pp.19)

325. D. S. Jin and J. Ye, "Molecular collisions and reactions in the quantum regime," Dynamics of Molecular Collisions Conference, Snowbird, Utah, July 10 – 15, 2011.

326. 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.

327. J. Ye, "Coherent control for cold molecules," Gordon Research Conference on Quantum Control of Light and Matter, Mt. Holyoke College, Massachusetts, Jul. 31 – Aug. 5, 2011.

328. J. Ye, “Frequency combs and spectroscopy - from IR to XUV,” OSA Traveling Lecture, OSA Student Chapter of Griffith University, Brisbane, Australia, August 22, 2011.

329. J. Ye, “Polar molecules in the quantum regime,” Physics Colloquium, Swinburne University, Australia, August 24, 2011.

330. J. Ye, “Molecules are quantum – chemistry near Absolute Zero,” Director's Colloquium, College of Physical & Mathematical Sciences, Australian National University, Canberra, Australia, August 25, 2011.

331. J. Ye, “Outlook of quantum optics for precision measurement,” Symposium of QUANTUM OPTICS – The Next 25 Years, Australian National University, Canberra, Australia, August 27, 2011.

332. 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)

333. J. Ye, “Molecules in the quantum regime,” Colloquium, The University of New South Wales, Sydney, Australia, August 30, 2011.

334. J. Ye, “Molecular collisions and reactions near Absolute Zero,” Conference on Molecular Energy Transfer (COMET), Oxford University, UK, September 11 – 16, 2011.

335. 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.

336. K. C. Cossel, A. Foltynowicz, P. Masłowski, T. Ban, F. Adler, and J. Ye, “Mid-infrared and cavity-enhanced FTIR frequency comb spectroscopy,” Symposium on *A Revolution in Spectroscopy by the Optical Frequency Combs*, Tsukuba, Japan, September 26, 2011.

337. J. Ye, “Precision measurements in many-particle systems,” Annual Meeting, the Four Corners Section, American Physical Society, Tucson, Arizona, October 21 – 22, 2011.

338. J. Ye, “Optical Atomic Clocks & Absolute-Zero Chemistry – Probing Quantum Matter with Precision Light,” The 25th Year Celebration of the Multi-University Research Initiative Program, Department of Defense, Washington D.C., Nov. 9, 2011.

339. J. Ye, “Frequency comb spectroscopy - from IR to extreme ultraviolet,” Joint Seminar Series at Lund Laser Centre (LLC), “Quantum metrology with ultracold atoms - Optical atomic clocks,” Physics Seminar, Lund University, Sweden, November 14 – 15, 2011.

340. J. Ye, “Quantum metrology – optical atomic clocks with ultracold matter,” OSA Traveling Lecture, OSA Student Chapter of the Autonomous University of San Luis Potosi, Mexico, November 23, 2011.

341. J. Ye, “Optical atomic clocks and chemistry near absolute zero – probe and control quantum matter with light,” Colloquium, International Center for Quantum Materials, Peking University, December 23, 2011. East China Normal University, Dec. 29, 2011.

342. J. Ye, “Direct frequency comb spectroscopy in the XUV,” Atomic and Molecular Physics Program, AFOSR, Arlington, VA, January 5 – 6, 2012.

343. J. Ye, "Ultracold physics and ultrafast technology," Inaugural Winter School on Atomic, Molecular and Optical Physics, B2 Institute, Biosphere 2 Campus, University of Arizona, Tucson, Arizona, January 8 – 13, 2012. (Organized by: ITAMP & B2 Institute)

344. J. Ye, "Ultracold molecules," Purdue University Physical Chemistry Series, Feb. 22, 2012.

345. J. Ye, "Precision quantum metrology with optical clocks and many-body physics," Tutorial, American Physics Society March Meeting, Boston, MA, Feb. 26, 2012.

346. J. Ye, "Many-body physics with ultracold alkaline-earth fermions in optical lattices," American Physics Society March Meeting, Boston, MA, Feb. 28, 2012.

347. F. Adler, P. Maslowski, A. Foltynowicz, T. Ban, K. C. Cossel, and J. Ye, "Frequency comb spectroscopy in the mid-infrared for gas analysis," PITTCON, Specialty Gas Analysis Session, Philadelphia, PA, March 17 – 21, 2012.

348. J. Ye, "Probing and controlling quantum matter with precision light," Department of Physics, Columbia University, New York, March 29, 2012.

349. J. Ye, "Molecules are quantum: chemistry near absolute zero," Northwestern University Colloquium, March 30, 2012.

350. J. Ye, "Ultracold molecules," 4th annual Kent R. Wilson Lecture (Physical Chemistry), University of California at San Diego, April 3, 2012.

351. J. Ye, "Precision metrology and control of quantum matter with light," Annual Meeting, National Academy of Sciences, Washington DC, US, April 28, 2012.

352. J. Ye, "Frequency comb spectroscopy from mid-infrared to extreme ultraviolet," Conference Tutorial, Conference on Lasers and Electro-Optics (CLEO), San Jose, California, May 6-11, 2012.

353. J. Ye, "Precision metrology and many-body quantum physics," *Frontier of Cold Atoms and Related Topics*, The Chinese University of Hong Kong and Hong Kong University of Science and Technology, Hong Kong, May 14 – 17, 2012.

354. A. M. Rey, M. J. Martin, M. D. Swallows, M. Bishof, C. Benko, S. Blatt, J. Von Stecher, A. Gorshkov, and J. Ye, "Probing many-body spin interactions with an optical lattice clock," IEEE International Frequency Control Symposium (IFCS), Baltimore, Maryland, May 21 – 24, 2012.

355. P. Masłowski, A. Foltynowicz, T. Ban, K. C. Cossel, and J. Ye, "Optical frequency comb as a new tool for broadband high resolution spectroscopy," 21st International Conference on Spectral Line Shapes (ICSLS), St.Petersburg, Russia, June 3 – 8, 2012.

356. M. J. Martin, M. D. Swallows, M. N. Bishof, C. A. Benko, J. von Stecher, A. M. Rey, J. Ye, T. Kessler, C. Hagemann, U. Sterr, and F. Riehle, "Ultrastable lasers for precision spectroscopy in a ^{87}Sr optical lattice clock," 43rd Annual Meeting of the APS Division of Atomic, Molecular and Optical Physics (DAMOP), Anaheim, California, June 4 – 8, 2012. Bulletin Am. Phys. Soc. **57**, pp. 35 (2012).

357. A. Cingöz, T. Allison, D. Yost, C. Benko, A. Ruehl, M. Ferman, I. Hartl, and J. Ye, "Frequency combs and precision spectroscopy in the extreme ultraviolet," 43rd Annual

Meeting of the APS Division of Atomic, Molecular and Optical Physics (DAMOP), Anaheim, California, June 4 – 8, 2012. Bulletin Am. Phys. Soc. **57**, pp. 198 (2012).

358. J. Ye, "Precision metrology and quantum many-body physics," 3rd Meeting on "Quantum Science", Monte Verita, Ascona, Switzerland, June 17 – 22, 2012.

359. T. Allison, A. Cingöz, C. Benko, D. Yost, A. Ruehl, M. Fermann, I. Hartl, J. Ye, "High Brightness XUV Frequency Combs via Intracavity High Harmonic Generation," 18th International Conference on Ultrafast Phenomena (UP2012), University of Lausanne, Lausanne, Switzerland, July 8 – 13, 2012.

360. J. Ye, "Quantum metrology and optical atomic clocks," The 23rd International Conference on Atomic Physics (ICAP 2012), Palaiseau, Paris, France, July 23 – July 27, 2012.

361. J. Ye, "Metrology," The 23rd International Conference on Atomic Physics (ICAP 2012), Student Summer School, Palaiseau, Paris, France, July 17 – July 21, 2012.

362. J. Ye, "Quantum metrology with optical clock and many-body physics," Gordon Research Conference on Quantum Science, Stonehill College Easton, Massachusetts, August 12 – 17, 2012.

363. J. Ye, "Atomic, Molecular, and Optical Physics: Scientific visions and instrumentation," The 78th Shuang-Qing Forum, *Development of Major Instrumentations for Scientific Research*, National Science Foundation of China, Beijing, August 29 – 30, 2012.

364. J. Ye, "Precision quantum metrology and many-body physics," Physics Colloquium, Washington State University, Pullman, Washington, September 4, 2012.

365. J. R. Williams and J. Ye, "Precision Metrology and Many-Body Quantum Physics in ^{87}Sr Atomic Clocks," XXXVI International Conference of Theoretical Physics Correlations & Coherence at Different Scales, Ustroń, Poland, September 13 – 18, 2012.

366. J. R. Williams and J. Ye, "Precision Metrology and Many-Body Quantum Physics in ^{87}Sr Atomic Clocks," 6th International Symposium on Metrology of Time and Space, Moscow, Russia, September 17 – 19, 2012.

367. J. Ye, "A *B*-to-*Z* guide for life on the quantum land," Symposium on "*Frontiers of Quantum Physics*", on the occasion of the 60th birthdays of R. Blatt & P. Zoller, University of Innsbruck, Austria, September 20 – 21, 2012.

368. M. J. Martin, M. Bishof, T. Nicholson, M. D. Swallows, J. Williams, B. Bloom, X. Zhang, S. Campbell, J. Von Stecher, A. V. Gorshkov, A. M. Rey, and J. Ye, "Demonstrating many-body effects and quantum-limited performance in ^{87}Sr optical lattice clocks," The 5th International Workshop on Ultracold Group II Atoms: Theory and Applications, National Institute of Information and Communications Technology, Japan, Oct 10 – 12, 2012.

369. A. M. Rey, M. J. Martin, M. D. Swallows, M. Bishof, C. Benko, S. Blatt, J. Von Stecher, A. Gorshkov, and J. Ye, "Probing many-body spin interactions with an optical lattice clock," The 5th International Workshop on Ultracold Group II Atoms: Theory and Applications, National Institute of Information and Communications Technology, Japan, Oct 10 – 12, 2012.

370. J. Ye, “Quantum metrology and optical clocks,” Optical Society of America (OSA) and American Physical Society division of laser science (APS-DLS) 28th annual meeting, LASER SCIENCE XXVIII, Rochester, New York, October 14 – 18, 2012.

371. J. Ye, “Ultraprecise meets ultrafast – control from mid-IR to XUV,” *Lasers Workshop 2012*, IEEE Photonics Society (Boston Chapter), MIT Lincoln Laboratory, October 24, 2012.

372. J. Ye, “Using a precision atomic clock to probe a strongly interacting many-body spin system,” Joint Atomic Physics and Quantum Optics Colloquium series (JAPQuOC), ITAMP and Harvard Quantum Optics Center, Cambridge, October 24, 2012.

373. J. Ye, “Precision metrology and spectroscopy,” 16th Laser Science Workshop (LSW-2012), Yichang, October 30 – November 3, 2012.

374. J. Ye, “Ultracold polar molecules – MOT, evaporation, and the quantum regime,” European Science Foundation Workshop on “Cold and Ultracold Molecules”, Obergurgl, Austria, November 18 – 23, 2012.