

List of Publications

Higher-order logarithmic corrections and the two-loop self-energy of a 1s electron in hydrogen

Savely G. Karshenboim, [Akira Ozawa](#), and Vladimir G. Ivanov

Phys. Rev. A 100, 032515 (2019)

The Lamb shift of the 1s state in hydrogen: Two-loop and three-loop contributions

Savely G. Karshenboim, [Akira Ozawa](#), Valery A. Shelyuto, Robert Szafron, Vladimir G. Ivanov

Phys. Lett. B, 795, 432 (2019)

Simple phase noise measurement scheme for cavity-stabilized laser systems

Fabian Schmid, Johannes Weitenberg, Theodor W. Hänsch, Thomas Udem, and [Akira Ozawa](#)

Opt. Lett. 44, 2709 (2019)

Motional resonances of three-dimensional dual-species Coulomb crystals

Byoung-moo Ann, Fabian Schmid, Jonas Krause, Theodor W Hänsch, Thomas Udem and [Akira Ozawa](#)

J. Phys. B: At. Mol. Opt. Phys. 52, 035002 (2019)

Quantum Zeno Effect assisted Spectroscopy of a single trapped ion

[Akira Ozawa](#), Josue Davila-Rodriguez, Theodor W. Hänsch and Thomas Udem

Scientific Reports, 8, 10643 (2018)

Efficient high harmonics generation by enhancement cavity driven with a post-compressed FCPA laser at 10 MHz

Zhigang Zhao, [Akira Ozawa](#), Makoto Kuwata-Gonokami and Yohei Kobayashi

High Power Laser Science and Engineering, 6, E19 (2018)

Multi-pass-cell-based nonlinear pulse compression to 115 fs at 7.5 μ J pulse energy and 300 W average power

Johannes Weitenberg, Andreas Vernaleken, Jan Schulte, [Akira Ozawa](#), Thomas Sartorius, Vladimir Pervak, Hans-Dieter Hoffmann, Thomas Udem, Peter Russbüldt, and Theodor W. Hänsch

Opt. Express, 25, 20502 (2017)

Single ion fluorescence excited with a single mode of an UV frequency comb

[Akira Ozawa](#), Josue Davila-Rodriguez, James R. Bounds, Hans A. Schuessler, Theodor W. Hänsch, and Thomas Udem

Nature Communications, 8, 44 (2017)

Mode locking based on the temporal Talbot effect

T. Udem, [A. Ozawa](#)

Appl. Phys. B 123: 100 (2017)

High repetition pump-and-probe photoemission spectroscopy based on a compact fiber laser system

Y. Ishida, T. Otsu, [A. Ozawa](#), K. Yaji, S. Tani, S. Shin and Y. Kobayashi

Rev. Sci. Instrum. 87, 123902 (2016)

Doppler Cooling Trapped Ions with a UV Frequency Comb

Josue Davila-Rodriguez, [Akira Ozawa](#), Theodor W. Hänsch, and Thomas Udem

Physical Review Letters, 116, 043002 (2016)

High average power coherent vuv generation at 10 MHz repetition frequency by intracavity high harmonic generation

(Selected as Spotlight on Optics, Highlighted Articles from OSA Journals)

[Akira Ozawa](#), Zhigang Zhao, Makoto Kuwata-Gonokami, and Yohei Kobayashi

Optics Express, Vol. 23, Issue 12, pp. 15107-15118 (2015)

デュアルコム分光～FT-IRにかわる高速広帯域精密分光～

久世直也, [小澤 陽](#), 小林洋平

日本物理学会誌 第 69 卷 1 号 (1 月号) (2014)

6-GHz, Kerr-lens mode-locked Yb:Lu2O3 ceramic laser for comb-resolved broadband spectroscopy

Mamoru Endo, [Akira Ozawa](#) and Yohei Kobayashi

Optics Letters, Vol. 38 Issue 21, pp. 4502 (2013)

紫外光周波数コム発生と精密分光への応用

[小澤 陽](#)・小林洋平

OplusE 2013 年 10 月号

10-MHz, Yb-fiber chirped-pulse amplifier system with large-scale transmission gratings

Yohei Kobayashi, Nozomi Hirayama, [Akira Ozawa](#), Takashi Sukegawa, Takashi Seki, Yoshiyuki Kuramoto, and Shuntaro Watanabe,

Optics Express Vol. 21, Issue 10, pp. 12865–12873 (2013).

Static FBG strain sensor with high resolution and large dynamic range by dual-comb spectroscopy

Kuse, Naoya; [Ozawa, Akira](#); Kobayashi, Yohei,

Optics Express, Vol. 21 Issue 9, pp.11141-11149 (2013).

Vuv frequency-comb spectroscopy of atomic xenon

[Akira Ozawa](#) and Yohei Kobayashi

Phys. Rev. A **87**, 022507 (2013)

真空紫外光周波数コム発生とその応用

[小澤 陽](#)・小林洋平

「光学」第 41 卷 第 9 号 (2012 年 9 月)

Comb-Resolved Dual-Comb Spectroscopy Stabilized by Free-Running Continuous-Wave Lasers

Naoya Kuse, [Akira Ozawa](#) Yohei Kobayashi,

Appl. Phys. Exp **5**, 112402 (2012)

Chirped-pulse direct frequency-comb spectroscopy of two-photon transitions

[Akira Ozawa](#) and Yohei Kobayashi

Phys. Rev. A **86**, 022514 (2012)

Kerr-lens mode-locked Yb:KYW laser at 4.6-GHz repetition rate

M. Endo, [A. Ozawa](#) and Y. Kobayashi

Optics Express **20** 12191-12197 (2012)

Injection locking of Yb-fiber based optical frequency comb

Naoya Kuse, [Akira Ozawa](#), Yutaka Nomura, Isao Ito, Yohei Kobayashi

Optics Express **20** 10509-10518 (2012)

Vacuum ultraviolet frequency combs generated by a femtosecond enhancement cavity in the visible

Birgitta Bernhardt, [Akira Ozawa](#), Andreas Vernaleken, Ioachim Pupeza, Jan Kaster, Yohei Kobayashi, Ronald Holzwarth, Ernst Fill, Ferenc Krausz, Theodor W. Hänsch, and Thomas Udem

OPTICS LETTERS **37** 503-505 (2012)

Coherent quasi-cw 153 nm light source at 33 MHz repetition rate

Yutaka Nomura, Yoshiaki Ito, [Akira Ozawa](#), Xiaoyang Wang, Chuangtian Chen, Shik Shin, Shuntaro Watanabe, and Yohei Kobayashi

Optics Letters **36** 1758-1760 (2011)

Interferometric autocorrelation in the ultraviolet utilizing spontaneous parametric down-conversion inside an enhancement cavity

P. Michelberger, R. Krischek, W. Wiecek, [A. Ozawa](#), and H. Weinfurter

Optics Letters **37** 1223-1225 (2012)

Power scaling of femtosecond enhancement cavities and high-power applications

I. Pupeza, T. Eidam, J. M. Kaster, B. Bernhardt, J. Rauschenberger, [A. Ozawa](#), E. Fill, Th. Udem, M. F. Kling, J. Limpert, Z. Alahmed, A. M. Azzeer, A. Tünnermann, Th. W. Hänsch, and F. Krausz

SPIE professional **7914**, 791411-1 (2011)

Carrier-envelope phase-locked pump-probe experiment for independent phase/delay manipulation

Shunsuke Adachi, [Akira Ozawa](#), Takayoshi Kobayashi

Chemical Physics Letters **489** 130-133 (2010)

Self-compensation of third-order dispersion for ultrashort pulse generation demonstrated in an Yb fiber oscillator

Naoya Kuse, Yutaka Nomura, [Akira Ozawa](#), Makoto Kuwata-Gonokami, Shuntaro Watanabe, and Yohei Kobayashi
Optics Letters, **35** 3868-3870 (2010)

Modeling and optimization of single-pass laser amplifiers for high-repetition-rate laser pulses

[Akira Ozawa](#), Thomas Udem, Uwe D. Zeitner, Theodor W. Hänsch, Peter Hommelhoff
PHYSICAL REVIEW A **82** 033815 (2010)

Power scaling of a high-repetition-rate enhancement cavity

Ioachim Pupeza, Tino Eidam, Jens Rauschenberger, Birgitta Bernhardt, [Akira Ozawa](#), Ernst Fill, Alexander Apolonski, Thomas Udem, Jens Limpert, Zeyad A. Alahmed, Abdallah M. Azzeer, Andreas Tünnermann, Theodor W. Hänsch, and Ferenc Krausz
Optics Letters, Vol. **35**, Issue 12, pp. 2052-2054 (2010)

A Peltier Cooled Single Pass Amplifier for Titanium: Sapphire Laser Pulses

[A. Ozawa](#), W. Schneider, F. Najafi, T.W. Hänsch, Th. Udem, P. Hommelhoff
LASER PHYSICS **20** 967 (2010)

Ultraviolet enhancement cavity for ultrafast nonlinear optics and high-rate multiphoton entanglement experiments

Roland Krischek, Witlef Wieczorek, [Akira Ozawa](#), Nikolai Kiesel, Patrick Michelberger, Thomas Udem, Harald Weinfurter
Nature Photonics **4**, 170 - 173 (2010)

Cavity-enhanced dual-comb spectroscopy

Birgitta Bernhardt, [Akira Ozawa](#), Patrick Jacquet, Marion Jacquy, Yohei Kobayashi, Thomas Udem, Ronald Holzwarth, Guy Guelachvili, Theodor W. Hänsch, Nathalie Picqué
Nature Photonics **4**, 55 - 57 (2010)

Efficient 494 mW sum-frequency generation of sodium resonance radiation at 589 nm by using a periodically poled Zn:LiNbO₃ ridge waveguide

T. Nishikawa, [A. Ozawa](#), Y. Nishida, M. Asobe, F.L. Hong, T.W. Hänsch
Opt. Express **17** 17792 (2009)

Phase-stable single-pass cryogenic amplifier for high repetition rate few-cycle laser pulses

[A. Ozawa](#), W. Schneider, T.W. Hänsch, Th. Udem, P. Hommelhoff
New J. Phys. **11** 083029 (2009)

Puzzling spectral structures of molecular vibration observed in ultrafast pump-probe experiment of transparent material

[A. Ozawa](#), T. Kobayashi
Chem. Phys. Lett. **477** 281 (2009)

Feasibility of coherent xuv spectroscopy on the 1S-2S transition in singly ionized helium

M. Herrmann, M. Haas, U.D. Jentschura, F. Kottmann, D. Leibfried, G. Saathoff, C. Gohle, [A. Ozawa](#), V. Batteiger, S. Knünz, N. Kolachevsky, H.A. Schüssler, T.W. Hänsch, Th. Udem
Phys. Rev. A **79** 052505 (2009)

Non-collinear high harmonic generation: A promising outcoupling method for cavity-assisted XUV generation

[A. Ozawa](#), A. Vernaleken, W. Schneider, I. Gotlibovych, Th. Udem, T.W. Hänsch
Opt. Express **16** 6233 (2008)

High harmonic frequency combs for high resolution spectroscopy

[A. Ozawa](#), J. Rauschenberger, Ch. Gohle, M. Herrmann, D.R. Walker, V. Pervak, A. Fernandez, R. Graf, A. Apolonski, R. Holzwarth, F. Krausz, T.W. Hänsch, Th. Udem
Phys. Rev. Lett. **100** 253901 (2008)
Selected for Virtual Journal of Ultrafast Science, Volume 7, Issue 7

Time resolution of chirped lattice vibrations in a mixed-valence metal-halogen complex system

F. Araoka, [A. Ozawa](#), D. Kawakami, S. Takaishi, M. Yamashita, T. Kobayashi
Phys. Rev. B **75** 224304 (2007)

Sub-5 fs time-resolved dynamic Franck-Condon overlaps associated with the $S_1 \rightarrow S_0$ stimulated transition in oligothiophene 13-mer

[A. Ozawa](#), K. Takimiya, T. Otsubo, T. Kobayashi
Chem. Phys. Lett. **409** 224 (2005)

Conference contributions

Direct comb spectroscopy by quantum-Zeno-effect assisted detection

[A. Ozawa](#), J. Davila-Rodriguez, T. W. Hänsch, and Th. Udem
Postdeadline Session, PD-1.1, CLEO Europe, Munich, Germany (2017.6)

VUV Frequency Comb Generation and its Applications (invited)

[Akira Ozawa](#), Zhao Zhigang, Makoto Kuwata-Gonokami and Yohei Kobayashi
HTu3C.1, High-Intensity Lasers and High-Field Phenomena (HILAS) (2014.3.18)

Intracavity High Harmonic Generation At 80 and 10 MHz Repetition Rates (Selected as "Best Paper Awards")

[Akira Ozawa](#), Makoto Kuwata-Gonokami and Yohei Kobayashi
TuF1-5, CLEO-PR 2013, Kyoto, JAPAN (2013.6)

Cavity-enhanced high harmonic generation with high power Yb-fiber laser at 10MHz repetition rate

Akira Ozawa, Makoto Kuwata-Gonokami and Yohei Kobayashi

CM3N.2. CLEO 2013, San Jose, USA (2013.6)

VUV frequency comb generation based on Yb-doped fiber lasers and its application for comb spectroscopy (invited)

Akira Ozawa and Yohei Kobayashi

Ultrafast Optics 2013, Davos, Switzerland Mar. 2013

紫外光周波数コム発生と精密分光への応用

小澤陽、小林洋平

レーザー学会第33回年次大会 シンポジウム2 (2013.1)

Single comb mode excitation of ground state xenon in VUV

Akira Ozawa and Yohei Kobayashi

Postdeadline Session II CTh5D.9 CLEO 2012, San Jose, USA (2012.5)

Intracavity high harmonic generation driven by Yb-fiber based MOPA system at 80MHz repetition rate

Akira Ozawa, Yohei Kobayashi

CThB4, CLEO 2012, Baltimore, USA (2011.5)

Yb レーザーによるフェムト秒外部共振器を用いた高次高調波発生 (Invited)

小澤陽、野村雄高、小林洋平

第71回応用物理学学会学術講演会 「量子エレクトロニクス分科内招待講演」長崎大学 2010年9月

XUV frequency combs (Invited)

Akira Ozawa, Andreas Vernaleken, Igor Gotlibovych, Peter Hommelhoff, Thomas Udem and Theodor W. Hänsch

SPIE International Symposium, Photonics Europe (2010.4)

Current Progress in XUV frequency combs (invited)

2nd International Conference on Attosecond Physics, Manhattan, KS, USA (2009)

Amplification of ultrashort pulses with a single-pass cryogenic Ti:sapphire Amplifier at 80MHz Repetition Rate

CLEO Europe, Munich, Germany (2009)

High Harmonic Frequency Combs for High Resolution Spectroscopy

16th International Conference on Ultrafast Phenomena, Stresa, Italy (2008)

Dynamics of one-dimensional exciton in porphyrin J aggregates by sub-5fs transient absorption experiment (poster)

15th International Conference on Ultrafast Phenomena, Pacific Grove, CA, USA (2006)

Patent:

“分光装置、検出装置、光源装置、反応装置及び測定装置”

助川 隆、小林 洋平、小澤 陽、遠藤 護、五神 真、特願 2013-120520

Awards:

第 33 回 (2012 年秋季) 応用物理学会講演奨励賞

真空紫外周波数コムによる精密分光実験

小澤陽、小林洋平

CLEO-PR&OECC/PS 2013 Best Paper Awards

Intracavity High Harmonic Generation At 80 and 10 MHz Repetition Rates

Akira Ozawa, Makoto Kuwata-Gonokami and Yohei Kobayashi

TuF1-5, CLEO-PR 2013, Kyoto, JAPAN (2013.6)