

(in chronologic order)

Theses**DIPLOMA THESIS:**

**Thorsten Weber**, „*Impulstransfer in Proton-Heliumstößen untersucht mit hochauflösender Rückstoßionenimpulsspektroskopie*“ (Momentum Transfer in Proton-Helium collisions investigated with high resolution Recoil-ion Momentum Spectroscopy),

Diploma Thesis at the Institut für Kernphysik Frankfurt of the Johann-Wolfgang-Goethe University Frankfurt a.M./Germany, (1999)

<http://univis.uni-frankfurt.de>

<http://hsb.uni-frankfurt.de/web/publications/diplom%5Fdoktor/>

**DOCTORAL THESIS:**

**Thorsten Weber**, „*Untersuchung der verschränkten Bewegung freier Elektronenpaare emittiert aus Ein- und Zweizentren Coulomb-Potentialen in Photoabsorptionsprozessen*“ (Investigation of the entangled Motion of free Electron Pairs emitted from Single- and Double Well Coulomb Potentials in Photoionization Processes),

Dissertation at the Institut für Kernphysik Frankfurt of the Johann-Wolfgang-Goethe University Frankfurt a.M./Germany, (2003)

<http://univis.uni-frankfurt.de>

<http://hsb.uni-frankfurt.de/web/publications/diplom%5Fdoktor/>

Papers and articles in books

Summary: 100 total

Journal	Number of	First/Last Author	Front-Page (print/online)
<i>Nature</i>	2	2	
<i>Science</i>	3		
<i>Nature Physics</i>	1		
<i>Phys. Rev. Lett.</i>	25	5	2
<i>Phys. Rev. A</i>	15 (+2 submitted)		1
<i>Journal of Physics B</i>	15	3	1
<i>other</i>	39	3	

**With a focus on:** Ion-atom and electron-atom collisions, single and double photoionization of light atoms (e.g. He, Ar, Ne) and molecules (e.g. H<sub>2</sub>, N<sub>2</sub>, CO) with synchrotron radiation and femtosecond laser pulses as well as high harmonics and Free Electron Lasers, study of ionization mechanisms, dynamics of many particle systems, imaging systems and multihit detection with position and time sensitive detectors

Publications denoted with “A” mark projects I was not performing the actual experiment but was involved in the interpretation of the data. In all other publications I was either first author, the driving PI, or had a major contribution.

1. R. Dörner, V. Mergel, L. Spielberger, M. Achler, Kh. Khayyat, T. Vogt, H. Bräuning, O. Jagutzki, **T. Weber**, J. Ullrich, R. Moshhammer, M. Unverzagt, W. Schmitt, H. Khemliche, M.H. Prior, C.L. Cocke, J. Feagin, R.E. Olson, H. Schmidt-Böcking  
**Kinematically Complete Experiments using Cold Target Recoil Ion Momentum Spectroscopy**  
FIAC - Debrecen 1996  
*Nucl. Instr. Meth.*, **B 124**, (1997)
2. B. Bapat, R. Moshhammer, W. Schmitt, H. Kollmus, R. Mann, R. Dörner, **Th. Weber**, K. Khayyat, A. Cassimi, L. Adoui, J.P. Grandin, J. Ullrich  
**Double Ionization of Helium by fast fully stripped Ions**  
*GSI-Preprint-98-65*, (1998)  
*Physica Scripta*, **T808**, (1999), 351 – 353
3. B. Krässig, , R. W. Dunford, D. S. Gemmell, S. Hasegawa, E. P. Kanter, H. Schmidt-Böcking, W. Schmitt, S. H. Southworth, **Th. Weber**, and L. Young  
**Compton Double Ionization of Helium in the Region of the Cross-Section Maximum**  
*Phys. Rev. Lett.*, **83**, (1999), 53 – 56
4. B. Bapat, R. Moshhammer, S. Keller, W. Schmitt, A. Cassimi, L. Adoui, H. Kollmus, R. Dörner, Th. Weber, K. Khayyat, R. Mann, J.P. Grandin, J. Ullrich  
**Double ionization of helium in fast ion collisions: the role of momentum transfer**  
*J. Phys. B: At. Mol. Opt. Phys.*, **32**, (1999), 1859 – 1872
5. Kh. Khayyat, **T. Weber**, R. Dörner, M. Achler, V. Mergel, L. Spielberger, O. Jagutzki, U. Meyer, J. Ullrich, R. Moshhammer, W. Schmitt, H. Knudsen, U. Mikkelsen, P. Aggerholm, E. Uggerhoej, S.P. Moeller, J.H. Rodriguez, S.F.C. O'Rourke, R.E. Olson, P.D. Fainstein, J.H. McGuire, H. Schmidt-Böcking  
**Differential Cross Sections in Antiproton- and Proton-Helium Collisions**  
*J. Phys. B: At. Mol. Opt. Phys.*, **32**, (1999), Letter to the Editor, L73 – L79
6. R. Dörner, **Th. Weber**, Kh. Khayyat, V. Mergel, H. Bräuning, M. Achler, O. Jagutzki, L. Spielberger, J. Ullrich, R. Moshhammer, W. Schmidt, R.E. Olson, C. Wood, H. Schmidt-Böcking  
**Recoil-Ion Momentum Spectroscopy: Momentum Space Images of Atomic Reactions**  
*New Directions in Atomic Physics*, Eds.: C.T. Whelan, R.D. Dreizler, J. Macek, H.R.J. Walters, Plenum (Press) New York (1999), 25
7. L. Spielberger, H. Bräuning, A. Muthig, J.Z. Tang, J. Wang, Y. Qui, R. Dörner, O. Jagutzki, Th. Tschentscher, V. Honkimäki, V. Mergel, M. Achler, **Th. Weber**, Kh. Khayyat, J. Burgdörfer, J. McGuire, H. Schmidt-Böcking  
**Cross Section Ratio of Double to Single Ionization of Helium by Compton Scattering of 40 to 100 keV X-rays.**  
*Phys. Rev. A*, **59**, (1999), 371 – 379
8. H. Schmidt-Böcking, V. Mergel, R. Dörner, H. Bräuning, M. Achler, L. Spielberger, O. Jagutzki, **Th. Weber**, Kh. Khayyat, J. Ullrich, C.L. Cocke, M.H. Prior, Y. Azuma, Y. Awaya, T. Kambara  
**Cold Target Helium Recoil Ion Momentum Imaging: Understanding Correlated Electron Motion in the Double Ionization Process**  
*Australian Journal of Physics*, **52**, (1999), 523 – 535
9. **Th. Weber**, M. Weckenbrock, A. Staudte, L. Spielberger, O. Jagutzki, V. Mergel, F. Afaneh, G. Urbasch, M. Vollmer, H. Giessen, R. Dörner  
**Recoil-Ion Momentum Distributions for Single and Double Ionization of Helium in Strong Laser Fields** *Phys. Rev. Lett.*, **84**, (2000), 443 – 446

10. **Th. Weber**, M. Weckenbrock, A. Staudte, L. Spielberger, O. Jagutzki, V. Mergel, F. Afaneh, G. Urbasch, M. Vollmer, H. Giessen, R. Dörner  
**Sequential and Nonsequential Contributions to Double Ionization in Strong Laser Fields**  
*J. Phys. B: At. Mol. Opt. Phys.*, **33**, (2000), L127 – L133
11. **Th. Weber**, H. Giessen, M. Weckenbrock, G. Urbasch, A. Staudte, L. Spielberger, O. Jagutzki, V. Mergel, M. Vollmer, R. Dörner  
**Correlated Electron Emission in Multiphoton Double Ionization**  
*Nature*, Vol. **405**, 8 June, (2000), 658
12. **Th. Weber**, Kh. Khayyat, R. Dörner, V. Mergel, O. Jagutzki, L. Schmitt, F. Afaneh, A. Gonzales, C. L. Cocke, A. L. Landers, H. Schmidt-Böcking  
**Kinematically Complete Investigation of Momentum Transfer for Single Ionization in Fast Proton Helium Collisions**  
*J. Phys. B: At. Mol. Opt. Phys.*, **33**, (2000), 3331 – 3344
13. R. Dörner, **T. Weber**, M. Achler, V. Mergel, L. Spielberger, O. Jagutzki, F. Afaneh, M.H. Prior, C.L. Cocke, H. Schmidt-Böcking  
**3-D Coincident Imaging Spectroscopy for Ions and Electrons**  
in: A.G. Suits, R.E. Continetti, *Imaging in Chemical Dynamics*, ACS Symposium Series 770, Oxford University Press (2000), 339-349
14. **Th. Weber**  
Atomic, Molecular and Optical Physics  
**Multiple Ionization Mechanisms**  
*Physics News in 2000 (APS News Supplement)*, (2000), 2
15. R. Dörner and **Th. Weber**  
*Scientific American, Online Version 'www.sciam.com'*, (24 Januar 2000), Title story, Ed.: Christine Leutwyler
16. **Th. Weber**, Kh. Khayyat, R. Dörner, V.D. Rodriguez, V. Mergel, O. Jagutzki, L. Schmidt, K.A. Müller, F. Afaneh, A. Gonzales, H. Schmidt-Böcking  
**Abrupt rise of the longitudinal recoil ion momentum distribution for ionizing collisions**  
*Phys. Rev. Lett.*, **86**, (2001), 224 – 227
17. V. Mergel, R. Dörner, Kh. Khayyat, M. Achler, **T. Weber**, H. Schmidt-Böcking, H.J. Lüdde  
**Strong Correlations in the He ground state momentum wave function - observed in the fully differential momentum distributions for the four particle p+He transfer ionization process**  
*Phys. Rev. Lett.*, **86**, (2001), 2257 – 2260
18. Y. Muramatsu, K. Ueda, H. Chiba, N. Saito, M. Lavollee, A. Czasch, **T. Weber**, O. Jagutzki, H. Schmidt-Boecking, R. Moshhammer, K. Kubozuka, I. Koyano  
**Bent and linear geometries of Renner-Teller pair states in CO<sub>2</sub> probed by triple-ion-coincidence momentum imaging**  
*Surface Rev. Lett.*, **9**, (2002), 93 – 97
19. **Th. Weber**, M. Weckenbrock, A. Staudte, M. Hattass, L. Spielberger, O. Jagutzki, V. Mergel, H. Schmidt-Böcking, G. Urbasch, H.W. Giessen, H. Bräuning, C.L. Cocke, M.H. Prior, R. Dörner  
**Atomic dynamics in single and multiphoton double ionization: An experimental comparison.**  
*Optics Express*, **8**, (2001), 368 – 376
20. A. Landers, **Th. Weber**, I. Ali, A. Cassimi, M. Hattass, O. Jagutzki, A. Nauert, T. Osipov, A. Staudte, M. H. Prior, H. Schmidt-Böcking, C. L. Cocke, R. Dörner  
**Photoelectron Diffraction Mapping: Molecules Illuminated from Within**  
*Phys. Rev. Lett.*, **86**, (2001), 013002-1

21. **Th. Weber**, O. Jagutzki, M. Hattass, A. Staudte, A. Nauert, L. Schmidt, M.H. Prior, A.L. Landers, A. Bräuning-Demian, H. Bräuning, C.L. Cocke, T. Osipov, I. Ali, R. Díez Muino, D. Rolles, F.J. García de Abajo, C.S. Fadley, M.A. Van Hove, A. Cassimi, H. Schmidt-Böcking, R. Dörner  
**K-shell photoionization of CO and N<sub>2</sub>: Is there a link between the photoelectron angular distribution and the molecular decay dynamics?**  
*J. Phys. B: At. Mol. Opt. Phys.*, **34**, (2001), 3669
22. M. Weckenbrock, M. Hattass, A. Czasch, O. Jagutzki, L. Schmidt, **T. Weber**, H. Roskos, T. Löffler, M. Thomson, R. Dörner  
**Experimental Evidence for Electron Repulsion in Multiphoton Double Ionization** *J. Phys. B: At. Mol. Opt. Phys.*, **34**, (2001), L449 – L455
23. A. Staudte, **T. Weber**, H. Giessen, G. Urbasch, M. Vollmer, M. Weckenbrock, O. Jagutzki, L. Spielberger and R. Dörner  
**Double Ionization in Strong Fields: Ion Momenta and Correlated Electron Momenta**  
B. Priaux and K. Rzażewski (eds), *Super-Intense Laser Atom Physics*, Kluwer Academic (2001), 5-23
24. Y. Muramatsu, K. Ueda, N. Saito, H. Chiba, M. Lavollée, A. Czasch, **T. Weber**, O. Jagutzki, H. Schmidt-Böcking, R. Moshhammer, U. Becker, K. Kubozuka, and I. Koyano  
**Direct Probe of the Bent and Linear Geometries of the Core-Excited Renner-Teller Pair States by Means of the Triple-Ion-Coincidence Momentum Imaging Technique**  
*Phys. Rev. Lett.*, **88**, (2002), 133002-1
25. R. Dörner, H. Schmidt-Böcking, V. Mergel, **T. Weber**, L. Spielberger, O. Jagutzki, A. Knapp, H.P. Bräuning  
**From Atoms to Molecules**  
Many-Particle Quantum Dynamics in Atomic and Molecular Fragmentation, e.d. V. P. Shevelko, J. Ullrich, Springer-Verlag, (2002), p. 245-261  
Ed.: V.P. Shevelko and J. Ullrich, Springer Verlag, (2002)
26. T. Jahnke, **Th. Weber**, A. L. Landers, A. Knapp, S. Schössler, J. Nickles, S. Kammer, O. Jagutzki, L. Schmidt, A. Czasch, T. Osipov, E. Arenholz, A. T. Young, R. Díez Muino, D. Rolles, F. J. Garcia de Abajo, C. S. Fadley, M. A. Van Hove, S.K. Semenov, N.A. Cherepkov, J. Rösch, M. H. Prior, H. Schmidt-Böcking, C. L. Cocke and R. Dörner  
**Circular Dichroism in K-shell Ionization from Fixed-in-Space CO and N<sub>2</sub> Molecules**  
*Phys. Rev. Lett.*, **88**, (2002), 073002-1, **front page**
27. R. Dörner, **Th. Weber**, M. Weckenbrock, A. Staudte, M. Hattass, R. Moshhammer, J. Ullrich, H. Schmidt-Böcking  
**Multiple Ionization in Strong Laser Fields**  
*Advances in Atomic and Molecular Physics 2002*, Volume **48**  
Ed.: B. Bederson and H. Walther, Academic Press, Amsterdam, (2002)
28. F. Afaneh, R. Dörner, L. Schmidt, **Th. Weber**, K.E. Stiebing, O. Jagutzki and H. Schmidt-Böcking  
**Must saddle point electrons always ride on the saddle?**  
*J. Phys. B: At. Mol. Opt. Phys.*, **35**, (2002), Letter to the Editor, L229 – L235
29. A. Knapp, A. Kheifets, I. Bray, **Th. Weber**, A. L. Landers, S. Schössler, T. Jahnke, J. Nickles, S. Kammer, O. Jagutzki, L. Ph. Schmidt, T. Osipov, J. Rösch, M. H. Prior, H. Schmidt-Böcking, C. L. Cocke and R. Dörner  
**Mechanisms of Photo Double Ionization of Helium by 530 eV Photons**  
*Phys. Rev. Lett.*, **89**, (2002), 033004-1
30. O. Jagutzki, A. Cerezo, A. Czasch, R. Dörner, M. Hattass, M. Huang, V. Mergel, U. Spillmann, K. Ullmann-Pfleger, **T. Weber**, H. Schmidt-Böcking, G. D. W. Smith  
**Multiple Hit Readout of a Microchannel Plate Detector With a Three-Layer Delay-Line Anode**  
*IEEE Transactions on Nuclear Science*, **49**, (2002), 2477 – 2483

31. H. Schmidt-Böcking, V. Mergel, R. Dörner, C. L. Cocke, O. Jagutzki, L. Schmidt, **Th. Weber**, H. J. Lüdde, E. Weigold, J. Berakdar, H. Cederquist, H. T. Schmidt, R. Schuch and A. S. Kheifets  
**Revealing the non- $s^2$  contributions in the momentum wave function of ground state He**  
*Europhys. Rev. Lett.*, **62**, (2002), 477-483
32. **Th. Weber**, M. Weckenbrock, M. Balsler, L. Schmidt, O. Jagutzki, W. Arnold, O. Hohn, M. Schöffler, E. Arenholz, T. Young, T. Osipov, L. Foucar, A. De Fanis, R. Diez Muino, H. Schmidt-Böcking, C. L. Cocke, M. H. Prior, and R. Dörner  
**Auger electron emission from Fixed-in-Space CO**  
*Phys. Rev. Lett.*, **90**, (2002), 153003-1
33. A. Knapp, M. Walter, **Th. Weber**, A.L. Landers, S. Schössler, T. Jahnke, M. Schöffler, J. Nickles, S. Kammer, O. Jagutzki, L. Ph. H. Schmidt, T. Osipov, J. Rösch, M. H. Prior, H. Schmidt-Böcking, C. L. Cocke, J. Feagin and R. Dörner  
**Energy sharing and asymmetry parameters for photo double ionization of helium 100 eV above threshold in single-particle and Jacobi coordinates**  
*J. Phys. B: At. Mol. Opt. Phys.*, **35**, (2002), L521 – L526
34. H. Schmidt-Böcking, V. Mergel, R. Doerner, H.J. Luedde, L. Schmidt, **T. Weber**, E. Weigold, A.S. Kheifets  
**Fast p-He Transfer Ionization Processes: A Window to Reveal the Non- $s^2$  Contributions in the Momentum Wave Function of Ground-State He**  
*Many-Particle Quantum Dynamics in Atomic and Molecular Fragmentation*, Springer Series on Atomic, Optical, and Plasma Physics **35**,  
Ed.: V.P. Shevelko and J. Ullrich, Springer Verlag, (2003), p. 353-377
35. T. Osipov, C. L. Cocke, M. H. Prior, A. Landers, **T. Weber**, O. Jagutzki, L. Schmidt, H. Schmidt-Böcking and R. Dörner  
**Photoelectron-photoion momentum spectroscopy as a clock for chemical rearrangements: Isomerization of the dication of acetylene to the vinylidene configuration**  
*Phys. Rev. Lett.*, **90**, (2003), 233002-1
36. H. Schmidt-Böcking, V. Mergel, L. Schmidt, R. Dörner, O. Jagutzki, K. Ullmann, **T. Weber**, H. J. Lüdde, E. Weigold, A. S. Kheifets  
**Dynamics of ionization processes studied with the COLTRIMS method - new insight into e-e correlation.**  
*Radiation Physics and Chemistry*, **68**, (2003), 41 – 50
37. **Th. Weber** A. Czasch, O. Jagutzki, A. Müller, V. Mergel, A. Kheifets, J. Feagin, E. Rotenberg, G. Meigs, M. H. Prior, S. Daveau, A. L. Landers, C. L. Cocke, T. Osipov, H. Schmidt-Böcking, and R. Dörner  
**Fully Differential Cross Sections for Photo-Double-Ionization of D<sub>2</sub>**  
*Phys. Rev. Lett.*, **92**, (2004), 163001-1
38. T. Jalowy, **Th. Weber**, R. Dörner, L. Farenzena, V.M. Collado, E.F. da Silveira, H. Schmidt-Böcking, K.O. Groeneveld  
**Initial velocity of secondary ions from XY-TOF technique, simultaneous calibration by residual gas ionization**  
*International Journal of Mass Spectrometry*, **231**, (2004), 51-58
39. R. Dörner, H. Schmidt-Böcking, **T. Weber**, T. Jahnke, M. Schoeffler, A. Knapp, M. Hattass, A. Czasch, L.Ph. Schmidt, O. Jagutzki  
**Double ionization by one and many photons**  
*Radiation Physics and Chemistry*, **70**, (2004), 191–206
40. M. Hattass, T. Jalowy, A. Czasch, **Th. Weber**, T. Jahnke, S. Schössler, L. Ph. Schmidt, O. Jagutzki, R. Dörner, and H. Schmidt-Böcking  
**A 2 $\pi$  Spectrometer for Electron-Electron Coincidence Studies on Surfaces**  
*Review of Scientific Instruments*, **75**, No. 7, (2004), 2373 – 2378

41. H. Schmidt-Boecking, R. Dörner, O. Jagutzki, T. Jahnke, V. Mergel, L. Ph. H. Schmidt, **Th. Weber**, A. Czasch, Ch. Wimmer, M. Hattass, A. Knapp, M. Schöffler, C. L. Cocke, M. Prior, A. Kheifets, E. Weigold, F. Afaneh  
**Many-particle dynamics in atomic and molecular physics investigated with the COLTRIMS-technique: New insight e-e- correlation**  
*Nucl. Ph. A*, **737**, (2004), p. 306 – 313
42. M. Weckenbrock, D. Zeidler, A. Staudte, **Th. Weber**, M. Schöffler, M. Meckel, S. Kammer, M. Smolarski, O. Jagutzki, V. R. Bhardwaj, D. M. Rayner, D. M. Villeneuve, P. B. Corkum and R. Dörner  
**Fully Differential Rates for Femtosecond Multiphoton Double Ionization of Neon**  
*Phys. Rev. Lett.*, **92**, (2004), 213002-1, **front page**
43. H. Schmidt-Böcking, L. Schmidt, Th. Weber, V. Mergel, O. Jagutzki, A. Czasch, S. Hagmann, R. Dörner, Y. Demkov, T. Jahnke, M. Prior, C.L. Cocke, T. Osipov, A. Landers  
**Dynamics of multiple ionization of atoms and molecules by electron, photon, and ion impact - investigated by the COLTRIMS imaging method**  
*Radiation Physics and Chemistry*, **71**, (2004), 627-632
44. A L.Ph.H. Schmidt, Feras Afaneh, M. Schöffler, J. Titze, O. Jagutzki, **Th. Weber**, K. E. Stiebing, R. Dörner and H. Schmidt-Böcking  
**Fully Differential Study of Transfer Ionization Processes - a View into Correlated Many Particle Dynamics**  
*Physica Scripta*, **Vol. T110**, (2004), 379 – 383
45. A. Czasch, Feras Afaneh, M. Schöffler, J. Titze, O. Jagutzki, **Th. Weber**, K. E. Stiebing, R. Dörner and H. Schmidt-Böcking  
**Fully Differential Study of Transfer Ionization Processes - a View into Correlated Many Particle Dynamics**  
*Physica Scripta*, **Vol. T110**, (2004), 141 – 143
46. T. Jahnke, **Th. Weber**, T. Osipov, A. L. Landers, O. Jagutzki, L. Ph. H. Schmidt, C.L. Cocke, M.H. Prior, H. Schmidt-Böcking, R. Dörner  
**Multicoincidence studies of photo and Auger electrons from fixed-in-space molecules using the COLTRIMS technique**  
*J. of Elec. Spec. and Rel. Phen.*, **141**, (2004), 229 – 238
47. **Th. Weber**, A. O. Czasch, O. Jagutzki, A. K. Müller, V. Mergel, A. Kheifets, E. Rotenberg, G. Meigs, M. H. Prior, S. Daveau, A. Landers, C. L. Cocke, T. Osipov, R. Diez Muino, H. Schmidt-Böcking, R. Dörner  
**Complete photo-fragmentation of the deuterium molecule**  
*Nature*, **Vol. 431**, (2004), 437 – 440, Erratum: *Nature*, **Vol. 443**, (2006), 1014
48. N. Saito, Y. Muramatsu, H. Chiba, K. Ueda, K. Kubozuka, I. Koyano, K. Okada, O. Jagutzki, A. Czasch, **T. Weber**, M. Hattass, H. Schmidt-Böcking, R. Moshhammer, M. Lavollée, U. Becker  
**Deformation, nuclear motion and fragmentation of core-excited CO<sub>2</sub> probed by multiple-ion coincidence momentum imaging**  
*J. of Elec. Spec. and Rel. Phen.*, **141**, (2004), 183 – 193
49. D. Zeidler, M. Weckenbrock, A. Staudte, **Th. Weber**, M. Schöffler, M. Meckel, S. Kammer, M. Smolarski, O. Jagutzki, V.R. Bhardwaj, D.M. Rayner, D.M. Villeneuve, P.B. Corkum, and R. Dörner  
**Fully differential rates for femtosecond multiphoton double ionization of neon**  
*Photonics North 2004: Photonic Applications in Telecommunications, Sensors, Software, and Lasers*, edited by J. Armitage, R. Lessard, G. Lampropoulos, Proc. of SPIE Vol. **5579** (SPIE, Bellingham, WA, 2004), page 708 ff

50. A. Knapp, A. Kheifets, I. Bray, **Th. Weber**, A. L. Landers, S. Schössler, T. Jahnke, J. Nickles, S. Kammer, O. Jagutzki, L. Ph. H. Schmidt, M. Schöffler, T. Osipov, M. H. Prior, H. Schmidt-Böcking, C. L. Cocke and R. Dörner  
**Photo double ionization of helium 100 eV and 450 eV above threshold: I. Linearly polarized light**  
*J. Phys. B: At. Mol. Opt. Phys.*, **38**, (2005), 615 –633
51. A. Knapp, A. Kheifets, I. Bray, **Th. Weber**, A. L. Landers, S. Schössler, T. Jahnke, J. Nickles, S. Kammer, O. Jagutzki, L. Ph. H. Schmidt, M. Schöffler, T. Osipov, M. H. Prior, H. Schmidt-Böcking, C. L. Cocke and R. Dörner  
**Photo double ionization of helium 100 eV and 450 eV above threshold: II. Circularly polarized light**  
*J. Phys. B: At. Mol. Opt. Phys.*, **38**, (2005), 635 –643
52. A. Knapp, B. Krässig, A. Kheifets, I. Bray, **Th. Weber**, A. L. Landers, S. Schössler, T. Jahnke, J. Nickles, S. Kammer, O. Jagutzki, L. Ph. H. Schmidt, M. Schöffler, T. Osipov, M. H. Prior, H. Schmidt-Böcking, C. L. Cocke and R. Dörner  
**Photo double ionization of helium 100 eV and 450 eV above threshold: III. Gerade and ungerade amplitudes and their relative phases**  
*J. Phys. B: At. Mol. Opt. Phys.*, **38**, (2005), 645 –657
53. A. Czasch, L. Schmidt, T. Jahnke, **T. Weber**, O. Jagutzki, S. Schössler, M. Schöffler, R. Dörner, H. Schmidt-Böcking  
**Photo induced multiple fragmentation of atoms and molecules: Dynamics of Coulombic many-particle systems studied with the COLTRIMS reaction microscope**  
*Phys. Lett. A*, **347**, (2005), 95 – 102
54. T. Osipov, A. S. Alnaser, S. Voss, M. H. Prior, **T. Weber**, O. Jagutzki, L. Schmidt, H. Schmidt-Böcking, R. Dörner, A. Landers, E. Wells, B. Shan, C. Maharjan, B. Ulrich, P. Ranitovic, X. M. Tong, C. D. Lin and C. L. Cocke  
**Photon-ion collisions and molecular clocks**  
*J. of Mod. Opt.*, **52**, No. 2-3, (2005), p. 439 – 451
55. H. Schmidt-Boecking, M.S. Schöffler, T. Jahnke, A. Czasch, V. Mergel, L. Schmidt, R. Dörner, O. Jagutzki, M. Hattass, **Th. Weber**, E. Weigold, H.T. Schmidt, R. Schuch, H. Cederquist, Y. Demkov, C. Whelan, A. Godunov, J. Walters  
**Many-particle fragmentation processes in atomic and molecular physics - new insight into the world of correlation**  
*Nucl. Instr. Meth.*, **B 233**, (2005), p. 3 – 11
56. **Thorsten Weber**  
**Verschränkte Elektronenbewegung in Deuteriummolekülen**  
*Phys. Unserer Zeit*, **36**. Jahrgang, Nr. 1, (2005), p. 6 – 7
57. A. Czasch, M. Schöffler, M. Hattass, S. Schössler, T. Jahnke, **Th. Weber**, A. Staudte, J. Titze, C. Wimmer, S. Kammer, M. Weckenbrock, S. Voss, R. E. Grisenti, O. Jagutzki, L. Ph. H. Schmidt, H. Schmidt-Böcking, R. Dörner, J. M. Rost, T. Schneider, C.-N. Liu, I. Bray, A. S. Kheifets, and K. Bartschat  
**Partial Photoionization Cross Sections and Angular Distributions for Double Excitation of Helium up to the N=13 Threshold**  
*Phys. Rev. Lett.*, **95**, (2005), 243003-1 to 4, Erratum: *Phys. Rev. Lett.*, **97**, (2006), 259902-1 to 4
58. K. Hosaka, J. Adachi, A. V. Golovin, M. Takahashi, T. Teramoto, N. Watanabe, T. Jahnke, **Th. Weber**, M. Schöffler, L. Schmidt, T. Osipov, O. Jagutzki, A. L. Landers, M. H. Prior, H. Schmidt-Böcking, R. Dörner, A. Yagishita, S. K. Semenov, and N. A. Cherepkov  
**Nondipole effects in the angular distribution of photoelectrons from the C K shell of the CO molecule**  
*Phys. Rev. A*, **73**, (2006), 022716-1 to 8

59. A A. Staudte, D. Pavicic, S. Chelkowski, D. Zeidler, M. Meckel, H. Niikura, M. Schöffler, S. Schössler, B. Ulrich, P. P. Rajeev, **Th. Weber**, T. Jahnke, D. M. Villeneuve, A. D. Bandrauk, C. L. Cocke, P. B. Corkum, and R. Dörner  
**Attosecond Strobing of Two-Surface Population Dynamics in Dissociating H<sub>2</sub><sup>+</sup>**  
*Phys. Rev. Lett.*, **98**, (2007), 073003-1 to 4
60. F. Martin, J. Fernández, T. Havermeier, L. Foucar, **Th. Weber**, K. Kreidi, M. Schöffler, L. Schmidt, T. Jahnke, O. Jagutzki, A. Czasch, E. P. Benis, T. Osipov, A. L. Landers, A. Belkacem, M. H. Prior, H. Schmidt-Böcking, C. L. Cocke, R. Dörner  
**Single photon induced symmetry breaking of H<sub>2</sub> dissociation**  
*Science*, **315**, (2007), 629 – 633
61. R. Moshhammer, Y. H. Jiang, L. Foucar, A. Rudenko, Th. Ergler, C. D. Schröter, S. Lüdemann, K. Zrost, D. Fischer, J. Titze, T. Jahnke, M. Schöffler, **T. Weber**, R. Dörner, T. J. M. Zouros, A. Dorn, T. Ferger, K. U. Kühnel, S. Düsterer, R. Treusch, P. Radcliffe, E. Plönjes, and J. Ullrich  
**Few-Photon Multiple Ionization of Ne and Ar by Strong Free-Electron-Laser Pulses**  
*Phys. Rev. Lett.*, **98**, (2007), 203001-1 to 4 and *Virtual Journal of Ultrafast Science*, June 2007
62. A. Czasch, M. Schöffler, M. Hattass, S. Schössler, T. Jahnke, **Th. Weber**, A. Staudte, J. Titze, C. Wimmer, S. Kammer, M. Weckenbrock, S. Voss, R. E. Grisenti, O. Jagutzki, L. Ph. Schmidt, H. Schmidt-Böcking, R. Dörner, J. M. Rost, T. Schneider, Chien-Nan Liu, I. Bray, A. S. Kheifets, and K. Bartschat  
**Reply**  
*Phys. Rev. Lett.*, **98**, (2007), 109302-1 to 4
63. A L. Schmidt, M. S. Schöffler, K. E. Stiebing, H. Schmidt-Böcking, and R. Dörner, F. Afaneh, **Th. Weber**  
**Imaging of continuum states of the He<sub>2</sub><sup>2+</sup> quasimolecule**  
*Phys. Rev. A*, **76**, (2007), 012703-1 to 9
64. D. Akoury, K. Kreidi, T. Jahnke, **Th. Weber**, A. Staudte, M. Schöffler, N. Neumann, J. Titze, L. Ph. H. Schmidt, A. Czasch, O. Jagutzki, R. A. Costa Fraga, R. E. Grisenti, R. Díez Muiño, N. A. Cherepkov, S. K. Semenov, P. Ranitovic, C. L. Cocke, T. Osipov, H. Adaniya, J. C. Thompson, M. H. Prior, A. Belkacem, A. L. Landers, H. Schmidt-Böcking, R. Dörner  
**The Simplest Double Slit: Interference and Entanglement in Double Photoionization of H<sub>2</sub>**  
*Science*, **318**, (2007), 949 – 952
65. T. Jahnke, A. Czasch, M. Schöffler, S. Schössler, M. Kász, J. Titze, K. Kreidi, R. E. Grisenti, A. Staudte, O. Jagutzki, L. Ph. H. Schmidt, **Th. Weber**, H. Schmidt-Böcking, K. Ueda, and R. Dörner  
**Experimental Separation of Virtual Photon Exchange and Electron Transfer in Interatomic Coulombic Decay of Neon Dimers**  
*Phys. Rev. Lett.*, **99**, (2007), 153401-1 to 4
66. A. Staudte, C. Ruiz, M. Schöffler, S. Schössler, D. Zeidler, **Th. Weber**, M. Meckel, D. M. Villeneuve, P. B. Corkum, A. Becker, and R. Dörner  
**Binary and Recoil Collisions in Strong Field Double Ionization of Helium**  
*Phys. Rev. Lett.*, **99**, (2007), 263002-1 to 4
67. K. Kreidi, D. Akoury, T. Jahnke, **Th. Weber**, A. Staudte, M. Schöffler, N. Neumann, J. Titze, L. Ph. H. Schmidt, A. Czasch, O. Jagutzki, R. A. Costa Fraga, R. E. Grisenti, M. Smolarski, P. Ranitovic, C. L. Cocke, T. Osipov, H. Adaniya, J. C. Thompson, M. H. Prior, A. Belkacem, A. L. Landers, H. Schmidt-Böcking, and R. Dörner  
**Interference in the Collective Electron Momentum in Double Photoionization of H<sub>2</sub>**  
*Phys. Rev. Lett.*, **100**, (2008), 133005-1 to 4
68. M. Schoeffler, J. Titze, N. Petridis, T. Jahnke, K. Cole, L. Ph. H. Schmidt, A. Czasch, D. Akoury, O. Jagutzki, J. B. Williams, N. A. Cherepkov, S. K. Semenov, C. W. McCurdy, T. N. Rescigno, C. L. Cocke, T. Osipov, S. Lee, M. H. Prior, A. Belkacem, A. L. Landers, H. Schmidt-Böcking, **Th. Weber**, R. Dörner  
**Ultrafast probing of core hole localization in N<sub>2</sub>**  
*Science*, **320**, (2008), 920 – 923



69. A Y. Morishita, N. Saito, I. H. Suzuki, H. Fukuzawa, X.-J. Liu, K. Sakai, G. Prümper, K. Ueda, H. Iwayama, K. Nagaya, M. Yao, K. Kreidi, M. Schöffler, T. Jahnke, S. Schössler, R. Dörner, **T. Weber**, J. Harries and Y. Tamenori  
**Evidence of interatomic Coulombic decay in ArKr after Ar 2p Auger decay**  
*J. Phys. B: At. Mol. Opt. Phys.*, **41**, (2008), 025101
70. A K. Ueda, H. Fukuzawa, X.-J. Liu, K. Sakai, G. Prümper, Y. Morishita, N. Saito, I.H. Suzuki, K. Nagaya, H. Iwayama, M. Yao, K. Kreidi, M. Schöffler, T. Jahnke, S. Schössler, R. Dörner, **Th. Weber**, J. Harries, Y. Tamenori  
**Interatomic Coulombic decay following the Auger decay: Experimental evidence in rare-gas dimers**  
*J. Elec. Spec.. Relat. Phenom.*, 166-167, (2008), 3-10
71. T. Osipov, T. N. Rescigno, **T. Weber**, S. Miyabe, T. Jahnke, A. S. Alnaser, M. P. Hertlein, O. Jagutzki, L. Ph. H. Schmidt, M. Schöffler, L. Foucar, S. Schössler, T. Havermeier, M. Odenweller, S. Voss, B. Feinberg, A. L. Landers, M. H. Prior, R. Dörner, C. L. Cocke and A. Belkacem  
**Fragmentation pathways for selected electronic states of the acetylene dication**  
*J. Phys. B: At. Mol. Opt. Phys.*, **41**, (2008), 091001
72. K. Kreidi, T. Jahnke, **Th. Weber**, T. Havermeier, R. Grisenti, X. Liu, Y. Morisita, S. Schössler, L. Ph. H. Schmidt, M. Schöffler, M. Odenweller, J. Titze, N. Neumann, L. Foucar, F. Sturm, C. Stuck, H. Fukuzawa, G. Prümper, N. Saito, K. Ueda, A. Czasch, O. Jagutzki, H. Schmidt-Böcking, S. Semenov and R. Dörner  
**Localization Of Inner Shell Photo Electron Emission And ICD In Neon Dimers**  
*J. Phys. B: At. Mol. Opt. Phys.*, **41**, (2008), 101002
73. A K. Kreidi, T. Jahnke, **Th. Weber**, T. Havermeier, X. Liu, Y. Morisita, S. Schössler, L. Ph. H. Schmidt, M. Schöffler, M. Odenweller, N. Neumann, L. Foucar, J. Titze, B. Ulrich, F. Sturm, C. Stuck, R. Wallauer, S. Voss, I. Lauter, H. K. Kim, M. Rudloff, H. Fukuzawa, G. Prümper, N. Saito, K. Ueda, A. Czasch, O. Jagutzki, H. Schmidt-Böcking, S. Stoychev, Ph. V. Demekhin and R. Dörner  
**Relaxation processes following 1s photoionization and Auger decay in Ne<sub>2</sub>**  
*Phys. Rev. A*, **78**, (2008), 043422
74. M. Schoeffler, K. Kreidi, D. Akoury, T. Jahnke, A. Staudte, N. Neumann, J. Titze, L. Ph. H. Schmidt, A. Czasch, O. Jagutzki, R. A. Costa Fraga, R. E. Grisenti, M. Smolarski, P. Ranitovic, C. L. Cocke, T. Osipov, H. Adaniya, S. Lee, J. C. Thompson, M. H. Prior, A. Belkacem, **Th. Weber**, A. Landers, H. Schmidt-Böcking, and R. Dörner  
**Photo-double-ionization of H<sub>2</sub>: Two-center interference and its dependence on the internuclear distance**  
*Phys. Rev. A*, **78**, (2008), 013414-1 to 5
75. K. Kreidi, D. Akoury, T. Jahnke, **Th. Weber**, A. Staudte, M. Schöffler, N. Neumann, J. Titze, L.Ph.H. Schmidt, A. Czasch, O. Jagutzki, R.A. Costa Fraga, R.E. Grisenti, R. Díez Muiño, N.A. Cherepkov, S.K. Semenov, P. Ranitovic, C.L. Cocke, T. Osipov, H. Adaniya, J.C. Thompson, M.H. Prior, A. Belkacem, A. Landers, H. Schmidt-Böcking, and R. Dörner  
**Single photon double ionization of H<sub>2</sub> by circularly polarized photons at a photon energy of 160 eV**  
*Eur. Phys. J. Special Topics*, **169**, (2009), 109-116
76. A.L. Landers, F. Robicheaux, T. Jahnke, M. Schöffler, T. Osipov, J. Titze, S.Y. Lee, H. Adaniya, M. Hertlein, P. Ranitovic, I. Bocharova, D. Akoury, A. Bhandary, **Th. Weber**, M. H. Prior, C. L. Cocke, R. Dörner, and A. Belkacem  
**Angular Correlation between Photoelectrons and Auger Electrons from K-Shell Ionization of Neon**  
*Phys. Rev. Lett.*, **102**, (2009), 223001
77. H. Adaniya, B. Rudek, T. Osipov, **T. Weber**, A. Belkacem  
Experimental Study for dissociative electron attachment to water molecule in the 2B1 resonance  
*Journal of Physics: Conference Series*, **194**, (2009), 012031

78. A K. Kreidi, Ph.V. Demekhin, T. Jahnke, **Th. Weber**, T. Havermeier, X.-J. Liu, Y. Morisita, S. Schössler, L. Ph. H. Schmidt, M. Schöffler, M. Odenweller, N. Neumann, L. Foucar, J. Titze, B. Ulrich, F. Sturm, C. Stuck, R. Wallauer, S. Voss, I. Lauter, H. K. Kim, M. Rudloff, H. Fukuzawa, G. Prümper, N. Saito, K. Ueda, A. Czasch, O. Jagutzki, H. Schmidt-Böcking, S. Scheit, L. S. Cederbaum, and R. Dörner  
**Photo- and Auger-Electron Recoil Induced Dynamics of Interatomic Coulombic Decay**  
*Phys. Rev. Lett.*, **103**, (2009), 033001
79. F.P. Sturm, M. Schöffler, S. Lee, T. Osipov, N. Neumann, H.-K. Kim, S. Kirschner, B. Rudek, J. B. Williams, J. D. Daughhete, C. L. Cocke, K. Ueda, A. L. Landers, **Th. Weber**, M. H. Prior, A. Belkacem, and R. Dörner  
**Photoelectron and Auger-electron angular distributions of fixed-in-space CO<sub>2</sub>**  
*Phys. Rev. A*, **80**, (2009), 032506
80. H. Adaniya, B. Rudek, T. Osipov, D.J. Haxton, **T. Weber**, T.N. Rescigno, C. W. McCurdy, and A. Belkacem  
**Imaging the Molecular Dynamics of Dissociative Electron Attachment to Water**  
*Phys. Rev. Lett.*, **103**, (2009), 233201
81. N.A. Cherepkov, S.K. Semenov, M. S. Schöffler, J. Titze, N. Petridis, T. Jahnke, K. Cole, L. Ph. H. Schmidt, A. Czasch, D. Akoury, O. Jagutzki, J. B. Williams, C. L. Cocke, T. Osipov, S. Lee, M. H. Prior, A. Belkacem, A. L. Landers, H. Schmidt-Böcking, **Th. Weber**, and R. Dörner  
**Separation of Auger transitions into different repulsive states after K-shell photoionization of N<sub>2</sub> molecules**  
*Phys. Rev. A*, **80**, (2009), 051404(R)
82. S.K. Semenov, M. S. Schöffler, J. Titze, N. Petridis, T. Jahnke, K. Cole, L. Ph. H. Schmidt, A. Czasch, D. Akoury, O. Jagutzki, J. B. Williams, T. Osipov, S. Lee, M. H. Prior, A. Belkacem, A. L. Landers, H. Schmidt-Böcking, **Th. Weber**, N. A. Cherepkov, and R. Dörner  
**Auger decay of 1σ<sub>g</sub> and 1σ<sub>u</sub> hole states of N<sub>2</sub> molecule: disentangling decay routes from coincidence measurements**  
*Phys. Rev. A*, **81**, (2010), 043426
83. T.Y. Osipov, M. Stener, A. Belkacem, M. Schöffler, **Th. Weber**, L. Schmidt, A. Landers, M. H. Prior, R. Dörner, and C. L. Cocke  
**Carbon K-shell photoionization of fixed-in-space C<sub>2</sub>H<sub>4</sub>**  
*Phys. Rev. A*, **81**, (2010), 033429
84. T. Jahnke, H. Sann, T. Havermeier, K. Kreidi, C. Stuck, M. Meckel, M. Schöffler, N. Neumann, R. Wallauer, S. Voss, A. Czasch, O. Jagutzki, A. Malakzadeh, F. Afaneh, **Th. Weber**, H. Schmidt-Böcking, and R. Dörner  
**Ultrafast Energy Transfer between Water Molecules**  
*Nature Physics*, **6**, (2010), 139 – 142
85. T.Y. Osipov, **Th. Weber**, T.N. Rescigno, S.Y. Lee, A.E. Orel, M. Schöffler, F.P. Sturm, S. Schössler, U. Lenz, T. Havermeier, M. Kühnel, T. Jahnke, J. B. Williams, D. Ray, A. Landers, R. Dörner and A. Belkacem  
**Formation of inner-shell autoionizing CO<sup>+</sup> states below the CO<sup>2+</sup> threshold**  
*Phys. Rev. A*, **81**, (2010), 011402(R)
86. N.A. Cherepkov, S.K. Semenov, M.S. Schöffler, J. Titze, N. Petridis, T. Jahnke, K. Cole, L.Ph.H. Schmidt, A. Czasch, D. Akoury, O. Jagutzki, J.B. Williams, T. Osipov, S. Lee, M.H. Prior, A. Belkacem, A.L. Landers, H. Schmidt-Böcking, R. Dörner, and **Th. Weber**  
**Auger decay of 1σ<sub>g</sub> and 1σ<sub>u</sub> hole states of the N<sub>2</sub> molecule. II. Young-type interference of Auger electrons and its dependence on internuclear distance**  
*Phys. Rev. A*, **82**, (2010), 023420

87. A H. Sann, T. Jahnke, T. Havermeier, K. Kreidi, C. Stuck, M. Meckel, M. Schoeffler, N. Neumann, R. Wallauer, S. Voss, A. Czasch, O. Jagutzki, **Th. Weber**, H. Schmidt-Boecking, S. Miyabe, D.J. Haxton, A.E. Orel, T.N. Rescigno and R. Doerner  
**Electron diffraction self imaging of molecular fragmentation in two step double ionization of water**  
*Phys. Rev. Lett.*, **106**, (2011), 133001
88. T. Jahnke, J. Titze, L. Foucar, R. Wallauer, T. Osipov, E.P. Benis, O. Jagutzki, W. Arnold, A. Czasch, A. Staudte, M. Schöffler, A. Alnaser, **T. Weber**, M.H. Prior, H. Schmidt-Böcking, R. Dörner  
**Carbon K-shell Photo Ionization of CO: Molecular frame angular Distributions of normal and conjugate shakeup Satellites**  
*J. Electron Spectroscopy and Related Phenomena*, **183**, (2011), 48-52
89. M.S. Schoeffler, T. Jahnke, J. Titze, N. Petridis, K. Cole, L. Ph. H. Schmidt, A. Czasch, O. Jagutzki, J.B. Williams, C. L. Cocke, T. Osipov, S. Lee, M.H. Prior, A. Belkacem, A.L. Landers, H. Schmidt-Boecking, R. Doerner, and **Th. Weber**  
**Matter wave optics perspective at molecular photoionization: K-shell photoionization and Auger decay of N<sub>2</sub>**  
*New Journal of Physics*, **13**, special edition: matter wave optics, (2011), 095013
90. T. Jahnke, J. Titze, L. Foucar, R. Wallauer, T. Osipov, E.P. Benis, O. Jagutzki, W. Arnold, A. Czasch, A. Staudte, M. Schöffler, A. Alnaser, **T. Weber**, M.H. Prior, H. Schmidt-Böcking, R. Dörner  
**Carbon K-shell Photo Ionization of CO: Molecular frame angular Distributions of normal and conjugate shakeup Satellites**  
*J. Electron Spectroscopy and Related Phenomena*, **183**, (2011), 48-52
91. D.J. Haxton, H. Adaniya, D.S. Slaughter, B. Rudek, T. Osipov, **T. Weber**, T.N. Rescigno, C. W. McCurdy, and A. Belkacem  
**Observation of the dynamics leading to a conical intersection in dissociative electron attachment to water**  
*Phys. Rev. A*, **84**, (2011), 030701(R)
92. W. Cao, G. Laurent, S. De, M. Schöffler, T. Jahnke, A. S. Alnaser, I. A. Bocharova, C. Stuck, D. Ray, M.F. Kling, I. Ben-Itzhak, Th. Weber, A.L. Landers, A. Belkacem, R. Dörner, A.E. Orel, T.N. Rescigno, and C.L. Cocke  
**Dynamic modification of the fragmentation of autoionizing states of O<sub>2</sub><sup>+</sup>**  
*Phys. Rev. A*, **84**, (2011), 053406
93. H. Adaniya, D.S. Slaughter, T. Osipov, **T. Weber**, and A. Belkacem  
**A momentum imaging microscope for dissociative electron attachment**  
*Rev. Sci. Instrum.*, **83**, (2012), 023106
94. A S.K. Semenov, K. Kreidi, T. Jahnke, **Th. Weber**, T. Havermeier, R.E. Grisenti, X. Liu, Y. Morisita, L. Ph.H. Schmidt, M. S. Schöffler, M. Odenweller, N. Neumann, L. Foucar, J. Titze, B. Ulrich, F. Sturm, H.K. Kim, K. Ueda, A. Czasch, O. Jagutzki, N.A. Cherepkov, and R. Dörner  
**Interatomic Coulombic decay of fixed-in-space neon dimers**  
*Phys. Rev. A*, **85**, (2012), 043421
95. J.B. Williams, C.S. Trevisan, M.S. Schoeffler, T. Jahnke, I. Bocharova, H. Kim, B. Ulrich, R. Wallauer, F. Sturm, T.N. Rescigno, A. Belkacem, R. Doerner, **Th. Weber**, C.W. McCurdy, and A.L. Landers  
**Imaging Polyatomic Molecules in Three Dimensions using Molecular Frame Photoelectron Angular Distributions**  
*Phys. Rev. Lett.*, **108**, (2012), 233002

96. F. Trinter, L.Ph.H. Schmidt, T. Jahnke, M.S. Schöffler, O. Jagutzki, A. Czasch, J. Lower, T. A. Isaev, R. Berger, A.L. Landers, **Th. Weber**, R. Dörner, H. Schmidt-Böcking  
**Multi fragment vector correlation imaging: A search for hidden dynamical symmetries in many-particle molecular fragmentation processes**  
*“Molecular Physics: An International Journal at the Interface Between Chemistry and Physics: A Festschrift for Dudley Herschbach”*, Editor: B. Friedrich, Publisher: Taylor & Francis, DOI:10.1080/00268976.2012.686642, (2012)  
 and  
*Molecular Physics*, Vol. **110**, Nos. 15-16, (2012), 1863-1872, **best paper published during the calendar year 2012, as judged by the Editors for the Molecular Physics Longuet-Higgins Young Author’s Prize 2012**
97. J.B. Williams, C.S. Trevisan, M.S. Schoeffler, T. Jahnke, I. Bocharova, H. Kim, B. Ulrich, R. Wallauer, F. Sturm, T.N. Rescigno, A. Belkacem, R. Doerner, **Th. Weber**, C.W. McCurdy, and A.L. Landers  
**Probing the Dynamics of Dissociation of Methane Following Core Ionization Using Three-Dimensional Molecular Frame Photoelectron Angular Distributions**  
*J. Phys. B: At. Mol. Opt. Phys.*, **45**, (2012), 194003, **front page**,  
**Also featured in and on front page of “Highlights: A compilation of excellent papers published within the last two years” by J. Phys. B: At. Mol. Opt. Phys**
98. F. Trinter, M. Schoeffler, H.K. Kim, F. Sturm, K. Cole, N. Neumann, A. Vredenburg, J. Williams, I. Bocharova, R. Guillemin, M. Simon, A. Belkacem, A. Landers, **Th. Weber**, H. Schmidt-Boecking, R. Doerner, and T. Jahnke  
**Resonant Auger decay driven intermolecular Coulombic decay as a tool for site-selective creation of low energy electrons in biological systems**  
*Submitted to Phys. Rev. A*, (2012)
99. F. Robicheaux, M.P. Jones, M. Schoeffler, T. Jahnke, K. Kreidi, J. Titze, C. Stuck, R. Doerner, A. Belkacem, **Th. Weber** and A.L. Landers  
**Calculated and measured angular correlation between photoelectrons and Auger electrons from K-shell ionization**  
*J. Phys. B: At. Mol. Opt. Phys.*, **45**, (2012), 175001
100. M.S. Schoeffler, C. Stuck, M. Waitz, F. Trinter, T. Jahnke, U. Lenz, M. Jones, A. Belkacem, A. Landers, C. L. Cocke, J. Colgan, A. Kheifets, I. Bray, H. Schmidt-Boecking, R. Doerner, and **Th. Weber**  
**Ejection of quasi free electron pairs from the helium atom ground state by a single photon**  
*Phys. Rev. Lett.*, **111**, (2013), 013003
101. D.S. Slaughter, D.J. Haxton, H. Adaniya, **T. Weber**, T.N. Rescigno, C.W. McCurdy, and A. Belkacem  
**Ion momentum imaging of dissociative electron attachment dynamics in methanol**  
*Phys. Rev. A*, **87**, (2013), 052711, **fig 4a featured in “Kaleidoscope” (journal website)**
102. A. Moradmand, D.S. Slaughter, D.J. Haxton, T.N. Rescigno, C.W. McCurdy, **Th. Weber**, S. Matsika, A.L. Landers, A. Belkacem, and M. Fogle  
**Dissociative electron attachment to carbon dioxide via the  $^2\Pi_u$  shape resonance**  
*submitted to Phys. Rev. A*, (2013)
103. B. Gaire, D.J. Haxton, P. Braun, S.Y. Lee, I. Bocharova, F.P. Sturm, N. Gehrken, M. Honig, M. Pitzer, D. Metz, H-K. Kim, T. Jahnke, H. Gassert, S. Zeller, J. Voigtsberger, W. Cao, M. Zohrabi, J. Williams, A. Gatton, D. Reedy, C. Nook, Th. Mueller, A. Landers, C. L. Cocke, I. Ben-Itzhak, R. Doerner, A. Belkacem, and **Th. Weber**  
**Photo double ionization of ethylene and acetylene near threshold**  
*Draft to be submitted to Phys. Rev. A*, (2013)

104. B. Gaire, D.J. Haxton, P. Braun, S.Y. Lee, I. Bocharova, F.P. Sturm, N. Gehrken, M. Honig, M. Pitzer, D. Metz, H-K. Kim, T. Jahnke, H. Gassert, S. Zeller, J. Voigtsberger, W. Cao, M. Zohrabi, J. Williams, A. Gatton, D. Reedy, C. Nook, Th. Mueller, A. Landers, C. L. Cocke, I. Ben-Itzhak, R. Doerner, A. Belkacem, and **Th. Weber**  
**Hydrogen and fluorine migration in the photo double ionization of 1,1-difluoroethylene (C<sub>2</sub>H<sub>2</sub>F<sub>2</sub>) near threshold**  
*Draft to be submitted to Phys. Rev. A, (2013)*

## Conference Proceedings and Abstracts

1. T. Weber et al.
  - a) *Annual report of the Institut für Kernphysik Frankfurt, IKF-58*, (1997), 31
  - b) *Conference Proceedings: Energiereiche Atomare Stöße, 19*, (1998), 21
  - c) *Verhandlungen der DPG-Tagung*, (1998), Konstanz
2. R. Dörner, ..., T. Weber et al. *AIP conference proceedings, Atomic Processes in Plasmas*, (1998), 443, Ed.: E. Oks and M. Pindzola
3. T. Weber et al.
  - a) *Annual Report of the Institut für Kernphysik Frankfurt, IKF-59*, (1998), 16
  - b) *Conference Proceedings: Energiereiche Atomare Stöße, 20*, (1999), 13
4. L. Spielberger, ..., Th. Weber et al. *Abstracts for 18<sup>th</sup> international conference on x-ray and inner-shell processes*, (1999), Chicago
5. M.A. Abdallah, ..., T. Weber et al.
  - a) *Abstracts for 18<sup>th</sup> international conference on x-ray and inner-shell processes*, (1999), Chicago
  - b) *AIP Conference Proceedings, 506*, (2000), 101 – 116
6. B. Bapat, ..., Th. Weber et al. *Abstracts for 18<sup>th</sup> international conference on x-ray and inner-shell processes*, (1999), Chicago
7. B. Krässig, ..., Th. Weber et al. *Abstracts for 18<sup>th</sup> international conference on x-ray and inner-shell processes*, (1999), Chicago
8. E. Ertürk, ..., Th. Weber et al. *Proceedings of the workshop New Directions in Atomic Physics*, (1999), 179  
Ed.: C.T. Whelan, R.D. Dreizler, J. Macek, H.R.J. Walters, Plenum Press, New York,
9. R. Dörner, Th. Weber et al. *Proceedings of the workshop New Directions in Atomic Physics*, (1999), 25  
Ed.: C.T. Whelan, R.D. Dreizler, J. Macek, H.R.J. Walters, Plenum Press, New York,
10. R. Dörner, ..., Th. Weber et al. *International Workshop on Atomic and Molecular Physics at High Brilliance Synchrotron Radiation Facilities*, Himeji, JASRI (1999): 109  
Ed.: M. Terasawa and T. Mukoyama
11. R. Dörner, ..., Th. Weber et al. *Abstracts of papers of the American Chemical Society, 218*: 174 – PHYS, Part 2 AUG 22, (1999)
12. R. Dörner, T. Weber et al. *Proceedings: Atoms and quantum dots in laser fields: Fundamental processes*, Pisa, published by the Societa Italiana di Fisica, (2000)
13. R. Dörner, T. Weber et al. *Imaging in Chemical Dynamics*, ACS Symposium Series 770, (2000), 339 – 349  
Ed.: A.G. Suits, R.E. Continetti, Oxford University Press

14. T. Jaloway, ..., **T. Weber** et al. *Conference Proceedings: Energiereiche Atomare Stöße*, **21**, (2000), 148
15. A. Staudte, **T. Weber** et al. *Proceedings of the SILAP 2000 workshop: Super-Intense Laser Atom Physics*, Kluwer Academic, (2001), 15 – 23, Ed.: B. Piaux and K. Rzazewski
16. A. Landers, **Th. Weber** et al. *Proceedings of the 16th International Conference on the Application of Accelerators in Research and Industry*, American Institute of Physics, International Isotopes Incorporated, (2001)  
Ed.: J.L. Duggan and I.L. Morgan
17. **Th. Weber** et al.
  - a) *Proceedings of the 16th International Conference on the Application of Accelerators in Research and Industry*, American Institute of Physics, International Isotopes Incorporated, (2001),  
Ed.: J.L. Duggan and I.L. Morgan
  - b) *Abstract for ECAMP VII*, (2001), Berlin
18. Y. Muramatsu, ..., **T. Weber** et al. *Abstract for ICPEAC*, Special Reports, (2001)
19. **Th. Weber** et al. *Abstract for ISIAAC and CAARI and ECAMP VII*, (2001)
20. R. Dörner, **Th. Weber** et al. *Photonic Electronic and Atomic Collisions proceedings of the ICPEAC*, (2001)  
Rinton Press, 27 – 35
21. A. Landers, **Th. Weber** et al. *Photonic Electronic and Atomic Collisions proceedings of the ICPEAC*, (2001)  
Rinton Press, 149 – 152
22. **Th. Weber** et al. *Abstract for DAMOP*, (2001), London/Ontario
23. H. Schmidt-Böcking, ..., **T. Weber** et al. *AIP conference Proceedings (ICPEAC)*, 604, (2002), 120 – 127, Ed.: D.H. Madison and M. Schulz
24. Y. Muramatsu, ..., **T. Weber** et al. *Abstract for the International Workshop on Photoionization (IWP)*, (2002)
25. **Th. Weber** et al. *Proceedings of the International Conference on Electron and Photon Impact Ionization and Related Topics*, (2002), Metz
26. A. Staudte, **Th. Weber** et al. *Proceedings of the International Conference on Electron and Photon Impact Ionization and Related Topics*, (2002), Metz
27. **Th. Weber** et al. *Abstract for Hauptvortrag DPG-Tagung*, Hannover, (2003)
28. **Th. Weber** et al. *Abstract for DAMOP/DAMP*, (2004), Tucson/Arizona
29. D. Zeidler, ..., **Th. Weber** et al. *Proceedings of SPIE*, Vol. **5579**, (2004), 709 – 714  
edited by J. Armitage, R. Lessard, G. Lampropoulos,
30. **Thorsten Weber** et al. *Proceedings for ICPEAC XXIV*, (2005), Rosario/Argentinien

31. M. Schoeffler, ..., **Th. Weber** et al. *AIP Conf. Proc., Vol. 793, Physics with Ultra Slow Antiproton Beams*, (2005), p. 89 – 97
32. **Thorsten Weber** et al. *Verhandlungen der DPG-Tagung*, (2006), Frankfurt
33. **Th. Weber** et al. *Abstract for DAMOP*, (2006), Calgary/Canada
34. **Thorsten Weber** et al. *Proceedings for ICPEAC XXV*, (2007), Heidelberg/Germany
35. A. Belkacem and **Th. Weber** *Abstract for 2007 Contractor Meeting of the Atomic, Molecular and Optical Science (AMOS) Program*,(2007), Airlie/USA
36. C.W. McCurdy..., **Th. Weber** et al. *Abstract for 2007 Contractor Meeting of the Atomic, Molecular and Optical Science (AMOS) Program*,(2007), Airlie/USA
37. **Thorsten Weber** et al. *Proceedings for ICES, (2008), Sao Paulo, Journal of Electron Spectroscopy and Related Phenomena, 156–158*, (2007), xx–civ
38. A. Belkacem and **Th. Weber** *Abstract for 2008 Contractor Meeting of the Atomic, Molecular and Optical Science (AMOS) Program*,(2008), Airlie/USA
39. C.W. McCurdy..., **Th. Weber** et al. *Abstract for 2008 Contractor Meeting of the Atomic, Molecular and Optical Science (AMOS) Program*,(2008), Airlie/USA
40. S.Y. Lee, ..., **Th. Weber** et al. *Abstract for DAMOP*, (2009), Charlottesville/USA
41. S.Y. Lee, ..., **Th. Weber** et al. *Proceedings for ICPEAC XXVI*, (2009), Kalamazoo/USA
42. T. Osipov, ..., **Th. Weber** et al. *Abstract for DAMOP*, (2009), Charlottesville/USA
43. H. Adaniya..., **Th. Weber** et al. *Abstract for DAMOP*, (2009), Charlottesville/USA
44. **Th. Weber** et al. *Abstract for DAMOP*, (2009), Charlottesville/USA
45. H. Adaniya..., **Th. Weber** et al. *Proceedings for ICPEAC XXVI*, (2009), Kalamazoo/USA
46. T. Osipov, ..., **Th. Weber** et al. *Proceedings for ICPEAC XXVI*, (2009), Kalamazoo/USA
47. K. Kreidi, ..., **Th. Weber** et al. *Proceedings for ICPEAC XXVI*, (2009), Kalamazoo/USA
48. N. Cherepkov, ..., **Th. Weber** et al. *Proceedings for ICPEAC XXVI*, (2009), Kalamazoo/USA
49. T. Osipov, ..., **Th. Weber** et al. *Proceedings for ICPEAC XXVI*, (2009), Kalamazoo/USA
50. H. Adaniya..., **Th. Weber** et al. *Proceedings for ICPEAC XXVI*, (2009), Kalamazoo/USA



51. A. Belkacem and **Th. Weber** *Abstract for 2009 Contractor Meeting of the Atomic, Molecular and Optical Science (AMOS) Program,(2009), Airlie/USA*
52. C.W. McCurdy..., **Th. Weber** et al. *Abstract for 2009 Contractor Meeting of the Atomic, Molecular and Optical Science (AMOS) Program,(2009), Airlie/USA*
53. F.P. Sturm..., **Th. Weber** et al. *Abstract for DAMOP, (2010), Houston/USA*
54. **Th. Weber** et al. *Abstract for DAMOP, (2010), Houston/USA*
55. **Th. Weber** et al. *Abstract for The 463rd Wilhelm und Else Heraeus-Seminar on Ultra fast Atomic Physics, (2010), Bad Honnef/Germany*
56. A. Belkacem and **Th. Weber** *Abstract for 2010 Contractor Meeting of the Atomic, Molecular and Optical Science (AMOS) Program, (2010), Airlie/USA*
57. C.W. McCurdy..., **Th. Weber** et al. *Abstract for 2010 Contractor Meeting of the Atomic, Molecular and Optical Science (AMOS) Program, (2010), Airlie/USA*
58. **Th. Weber** et al. *Abstract for the International Workshop on Photoionization (IWP), (2011), Las Vegas/USA*
59. **Th. Weber** et al. *Abstract for DAMOP, (2011), Atlanta/USA*
60. I. Bocharova ..., **Th. Weber** et al. *Abstract for DAMOP, (2011), Atlanta/USA*
61. F.P. Sturm ..., **Th. Weber** et al. *Abstract for DAMOP, (2011), Atlanta/USA*
62. D.S. Slaughter ..., **Th. Weber** et al. *Abstract for DAMOP, (2011), Atlanta/USA*
63. **Th. Weber** et al. *Abstract for International Symposium on (e,2e), Double Photoionization and Related Topics & 16th International Symposium on Polarization and Correlation in Electronic and Atomic Collisions, (2011), Dublin/Ireland*
64. A. Belkacem and **Th. Weber** *Abstract for 2011 Contractor Meeting of the Atomic, Molecular and Optical Science (AMOS) Program, (2011), Airlie/USA*
65. C.W. McCurdy..., **Th. Weber** et al. *Abstract for 2011 Contractor Meeting of the Atomic, Molecular and Optical Science (AMOS) Program, (2011), Airlie/USA*
66. **Th. Weber** et al. *Abstract for DAMOP, (2012), Anaheim/USA*
67. B. Gaire ..., **Th. Weber** et al. *Abstract for DAMOP, (2012), Anaheim /USA*
68. F.P. Sturm ..., **Th. Weber** et al. *Abstract for DAMOP, (2012), Anaheim /USA*
69. D.S. Slaughter ..., **Th. Weber** et al. *Abstract for DAMOP, (2012), Anaheim /USA*
70. A. Sharvovskiy, ...**Th. Weber** et al. *Conference Proceedings CAARI, (2012), Fort Worth/USA*

71. A. Belkacem and **Th. Weber** *Abstract for 2012 Contractor Meeting of the Atomic, Molecular and Optical Science (AMOS) Program, (2012), Potomac/USA*
72. C.W. McCurdy..., **Th. Weber** et al. *Abstract for 2012 Contractor Meeting of the Atomic, Molecular and Optical Science (AMOS) Program, (2012), Potomac/USA*
73. B. Gaire ..., **Th. Weber** et al. *Abstract for DAMOP, (2013), Quebec/Canada*
74. F.P. Sturm ..., **Th. Weber** et al. *Abstract for DAMOP, (2013), Quebec/Canada*

## National & International Stays

### Research Projects:

August 96	2 weeks	COLTRIMS-experiment at LEAR (atomic physics), CERN, <i>Geneva (Switzerland)</i>
May 97	2 weeks	Research project in cooperation with GSI/Darmstadt, GANIL, <i>Caen (France)</i>
July 97	7 weeks	Set-up and test of a COLTRIMS-apparatus on behalf of the RoentDek company ( <a href="http://www.RoentDek.com">www.RoentDek.com</a> ), ARGONNE, <i>Chicago (USA)</i>
September 97	1 week	Summer school, topic: Neutrino physics, <i>Erice (Italy)</i>
August 98	3 weeks	Experiment at the synchrotron for PhD project (first part), ALS, <i>Berkeley (USA)</i>
February 99	3 weeks	Experiment at the synchrotron for PhD project (second part)/installation of a detector prototype on behalf of the RoentDek company ( <a href="http://www.RoentDek.com">www.RoentDek.com</a> ), ALS, <i>Berkeley (USA)</i>
June 99	8 weeks	Research project in cooperation with the femto second laser lab of the Philips-University, <i>Marburg (Germany)</i>
December 99	4 weeks	Atomic physics with conventional electron spectroscopy within the framework of a BMBF-project, CAB, <i>Bariloche (Argentina)</i>
February 00	3 weeks	COLTRIMS-experiment (molecular physics), ALS, <i>Berkeley (USA)</i>
April 00	4 weeks	Set-up and test of a COLTRIMS-apparatus as well as assistance for an experiment on behalf of the RoentDek company ( <a href="http://www.RoentDek.com">www.RoentDek.com</a> ) at SPring8, <i>Harima (Japan)</i>
July 00	3 weeks	COLTRIMS-experiment (molecular physics)/test of a detector prototype on behalf of the RoentDek company ( <a href="http://www.RoentDek.com">www.RoentDek.com</a> ), ALS, <i>Berkeley (USA)</i>
February 01	4 weeks	COLTRIMS-experiment (atomic- und molecular physics), ALS, <i>Berkeley (USA)</i>
September 01	1 week	Imaging test-measurement on solid states (support of a PhD project), BESSY II, <i>Berlin (Germany)</i>
January 02	1 week	COLTRIMS-experiment (atomic physics: support of a PhD project), BESSY II, <i>Berlin (Germany)</i>

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February 02	4 weeks	COLTRIMS-experiment (molecular physics and test of new amplifiers on behalf of the RoentDek company, <a href="http://www.RoentDek.com">www.RoentDek.com</a> ), ALS, <b>Berkeley (USA)</b>
June 02	2 weeks	Imaging measurement on solid states (support of a PhD project), HASYLAB, <b>Hamburg (Germany)</b>
February 03	3 weeks	Research project in cooperation with the femto second laser lab of the NRC, <b>Ottawa (Canada)</b>
August 03	2 weeks	First part of the Humboldt research project: COLTRIMS-experiment (atomic- and molecular physics), ALS, <b>Berkeley (USA)</b>
March 04	2 weeks	Second part of the Humboldt research project (support of a Diploma study): COLTRIMS-experiment (atomic- and molecular physics), ALS, <b>Berkeley (USA)</b>
August 04	2 weeks	Third part of the Humboldt research project (support of a Diploma study): COLTRIMS-experiment (atomic- and molecular physics), ALS, <b>Berkeley (USA)</b>
March 05	2 weeks	Fourth part of the Humboldt research project (support of a Diploma study): COLTRIMS-experiment (molecular physics), ALS, <b>Berkeley (USA)</b>
August 05	3 weeks	COLTRIMS-experiment (molecular physics and electron momentum spectroscopy of a high temperature superconductor), ALS, <b>Berkeley (USA)</b>
October 05	2 weeks	Electron spectroscopy of metall clusters with FEL radiation in a collaboration of the University Rostock, Würzburg, Berlin and Frankfurt, DESY, <b>Hamburg (Germany)</b>
December 05	2 weeks	First COLTRIMS-experiment (atomic and molecular physics) with FEL radiation in a collaboration of the MPI-Heidelberg and the University of Frankfurt, DESY, <b>Hamburg (Germany)</b>
March 06	2 weeks	COLTRIMS-experiment (molecular physics: supervision of a Diploma project), ALS, <b>Berkeley (USA)</b>
June 06	4 weeks	COLTRIMS-Experiment with noble gas dimers (cluster physics: supervision of a PhD project) investigated with X-rays from DORIS in collaboration with the University of Frankfurt, DESY, <b>Hamburg (Germany)</b>

## Continuation Research Projects:

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		<u>Conferences:</u>
97/98/99	1 week each	EAS-meeting, <i>Riezlern (Austria)</i>
97/98/99/ 2003/06	1 week each	DPG-meeting, <i>Mainz, Konstanz, Heidelberg, Hannover, Frankfurt (Germany)</i>
August 99	1 week	X-99, <i>Chicago (USA)</i>
May 00	1 week	Many Part. Dyn. In Coulomb-Sys., <i>Bad-Honnef (Germany)</i>
November 00	1 week	CAARI, <i>Denton (USA)</i>
April 01	1 week	ECAMP, <i>Berlin (Germany)</i>
May 01	1 week	DAMOP XXII, <i>London (Canada)</i>
July 01	1 week	ICPEAC XX III, <i>Santa Fe (USA)</i>
July01	1 week	ISIAC, <i>Ensenada (Mexico)</i>
July02	1 week	EPII, <i>Metz (France)</i>
May 03	1 week	PETRA III: Concepts for beamlines at the future high energy synchrotron of the HASYLAB, <i>Hamburg (Germany)</i>
July 05	1 week	ICPEAC XX IV, <i>Rosario (Argentina)</i>
June 07	1 week	DAMOP 38 <sup>th</sup> , <i>Calgary (Canada)</i>
July 07	1 week	ICPEAC XX V, <i>Heidelberg (Germany)</i>
August 07	1 week	International Symposium on (e,2e), Double Photoionization and Related Topics, <i>Koenigstein (Germany)</i>
September 07/08/09/10/11/ 12	4 days	Research Meeting of the Atomic, Molecular and Optical Sciences (AMOS) Program, <i>Airlie/Potomac (USA)</i>
June 08	2 days	LCLS AMO and other Soft x-ray Experiments Proposal Prepara- tion Workshop, <i>Stanford (USA)</i>
July 09	1 week	ICPEAC XX VI, <i>Kalamzoo (USA)</i>
October 09	3 days	ALS Users' Meeting, <i>Berkeley (USA)</i>
December 09	3 days	UXSL workshop, <i>Berkeley (USA)</i>
May 10	3 days	DAMOP 41 <sup>st</sup> , <i>Houston (USA)</i>
July 10	3 days	Ultrafast Vacuum Ultraviolet & X-ray Physics Workshop, <i>Stan- ford (USA)</i>
August 10	3 days	The 463rd Wilhelm und Else Heraeus-Seminar on Ultra fast Atomic Physics, <i>Bad Honnef (Germany)</i>
May 11	5 days	IWP, <i>Las Vegas/USA</i>

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**Continuation Conferences:**

June 11	5 days	DAMOP 42 <sup>nd</sup> , <i>Atlanta (USA)</i>
July 11	5 days	ICPEAC XX VII, <i>Belfast (UK)</i>
August 11	3 days	International Symposium on (e,2e), Double Photoionization and Related Topics, <i>Dublin (Ireland)</i>
June 12	5 days	DAMOP 43 <sup>rd</sup> , <i>Anaheim (USA)</i>