

# Publications

## Articles in refereed journals

1. S. M. Weber, A. Lindinger, M. Plewicki, C. Lupulescu, F. Vetter, and L. Wöste. Temporal and spectral optimization course analysis of coherent control experiments. *Chem. Phys.*, 306(1-3):287–293, 2004.
2. S. M. Weber, A. Lindinger, F. Vetter, M. Plewicki, A. Merli, and L. Wöste. Application of parametric time and frequency domain shaping. *Eur. J. Phys. D*, 33(1):39–42, 2005.
3. A. Lindinger, S. M. Weber, C. Lupulescu, F. Vetter, M. Plewicki, A. Merli, L. Wöste, A. F. Bartelt, and H. Rabitz. Revealing spectral field features and mechanistic insights by control pulse cleaning. *Phys. Rev. A*, 71(1):013419, 2005.
4. A. Lindinger, S. M. Weber, A. Merli, F. Sauer, M. Plewicki, and L. Wöste. Optimal control methods applied on the ionization processes of alkali dimers. *J. Photochem. and Photobiol. A*, 180:256–261, 2006.
5. M. Plewicki, S. M. Weber, F. Weise, and A. Lindinger. Independent control over the amplitude, phase, and polarization of femtosecond pulses. *Appl. Phys. B*, 86(2):259–263, 2007.
6. F. Weise, S. M. Weber, M. Plewicki, and A. Lindinger. Application of phase, amplitude, and polarization shaped pulses for optimal control on molecules. *Chem. Phys.*, 332:313–317, 2007.
7. M. Plewicki, F. Weise, S. M. Weber, and A. Lindinger. Phase, amplitude, and polarization shaping with a pulse shaper in a Mach-Zehnder interferometer. *Appl. Opt.*, 45(32):8354–8359, 2006.
8. C. Lupulescu, A. Lindinger, M. Plewicki, A. Merli, S. M. Weber, and L. Wöste. Frequency dependent optimization of the ionization process in NaK by means of fs-pulses. *Chem. Phys.*, 296(1):63–69, 2004.
9. A. Lindinger, C. Lupulescu, M. Plewicki, F. Vetter, A. Merli, S. M. Weber, and L. Wöste. Isotope selective ionization by optimal control using shaped fs-laser pulses. *Phys. Rev. Lett.*, 93:033001, 2004.
10. A. Lindinger, M. Plewicki, S. M. Weber, C. Lupulescu, and L. Wöste. Spectral modification of supercontinuum light by means of fs-light pulses optimized in a closed learning loop. *Optica Applicata*, 34(3):341–348, 2004.

11. A. Lindinger, F. Vetter, C. Lupulescu, M. Plewicki, S. M. Weber, A. Merli, and L. Wöste. Selective ionization via different electronic pathways by optimal control demonstrated for  $^{23}\text{Na}^{39}\text{K}/^{23}\text{Na}^{41}\text{K}$ . *Chem. Phys. Lett.*, 397:123–127, 2004.
12. B. Schäfer-Bung, R. Mitric, V. Bonačić-Koutecký, A. Bartelt, C. Lupulescu, A. Lindinger, Š. Vajda, S. M. Weber, and L. Wöste. Optimal control of ionization processes in NaK: Comparison between theory and experiment. *J. Phys. Chem. A*, 108(19):4175–4179, 2004.
13. F. Vetter, M. Plewicki, A. Lindinger, A. Merli, S. M. Weber, and L. Wöste. Optimized isotope-selective ionization of  $^{23}\text{Na}^{39}\text{K}$  and  $^{23}\text{Na}^{41}\text{K}$  by applying evolutionary strategies. *Phys. Chem. Chem. Phys.*, 7(6):1151–1156, 2005.
14. A. Lindinger, A. Merli, M. Plewicki, F. Vetter, S. M. Weber, and L. Wöste. Optimal control of isotope selective fragmentation. *Chem. Phys. Lett.*, 413:315–320, 2005.
15. A. Lindinger, C. Lupulescu, F. Vetter, M. Plewicki, S. M. Weber, A. Merli, and L. Wöste. Learning from the acquired optimized pulse shapes about the isotope selective ionization of potassium dimers. *J. Chem. Phys.*, 122(2):024312, 2005.
16. B. Schäfer-Bung, V. Bonačić-Koutecký, F. Sauer, S. M. Weber, L. Wöste, and A. Lindinger. Isotope selective photoionization of NaK by optimal control: Theory and experiment. *J. Chem. Phys.*, 125(21):214310, 2006.
17. W. Salzmann, U. Poschinger, R. Wester, M. Weidemüller, A. Merli, S. M. Weber, F. Sauer, M. Plewicki, F. Weise, A. M. Esparza, L. Wöste, and A. Lindinger. Coherent control with shaped femtosecond laser pulses applied to ultracold molecules. *Phys. Rev. A*, 73(2):23414, 2006.

### Conference proceedings

18. F. Sauer, A. Merli, M. Plewicki, S. M. Weber, L. Wöste, and A. Lindinger. Coherent control of isotope selective ionization and fragmentation of potassium dimers. M. L. Jr. Kimble, A. W. Castleman, editors, *Proceeding of the 7th Int. Conf. on Femtochemistry*, Femtochemistry VII: Fundamental Ultrafast Processes in Chemistry, Physics, and Biology, page 490. Elsevier: Amsterdam, 2006.
19. A. Lindinger, C. Lupulescu, M. Plewicki, S. M. Weber, A. Merli, F. Vetter, and L. Wöste. Closed loop optimization of the ionization process in NaK. Learning from the optimal pulse shape. *Femtochemistry and Femtobiology*, pages 111–122. Elsevier (Amsterdam), 2004.
20. A. Lindinger, S. M. Weber, A. Merli, F. Sauer, M. Plewicki, and L. Wöste. Controlling the dynamical pathways in the ionization process of NaK dimers. M. L. Jr. Kimble, A. W. Castleman, editors, *Proceeding of the 7th Int. Conf. on Femtochemistry*, Femtochemistry VII: Fundamental Ultrafast Processes in Chemistry, Physics, and Biology, page 479–487. Elsevier: Amsterdam, 2006.

**Accepted for publication**

21. S. M. Weber, F. Weise, M. Plewicky, and A. Lindinger. Interferometric generation of parametrically shaped polarization pulses. *Appl. Opt.*, accepted, 2007.
22. S. M. Weber, F. Sauer, M. Plewicky, A. Merli, L. Wöste, and A. Lindinger. Multi-objective optimization on alkali dimers. *J. Mod. Opt.*, accepted, 2007.

**Articles in preparation**

S. M. Weber, M. Plewicky, F. Weise, and A. Lindinger. Parametric phase, amplitude, and polarization shaping on molecules, in preparation.

W. Salzmann, J. Eng, T. Mullins, M. Albert, R. Wester, M. Weidemüller, A. Merli, S. M. Weber, F. Sauer, M. Plewicky, F. Weise, L. Wöste, and A. Lindinger. Photoassociation of ultracold molecules with shaped femtosecond laser pulses, in preparation

**Patent application**

A. Lindinger, M. Plewicky, S. M. Weber und F. Weise. Vorrichtung und Verfahren zur Herstellung und Detektion in Amplitude, Phase und Polarisation geformter Laserpulse. Eingereicht beim deutschen Patent- und Markenamt, 2006.

