Prof. Dr. Uwe Bovensiepen

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short CV

1996 Diploma, experimental physics, Freie Universität Berlin
2000 PhD, experimental physics, Freie Universität Berlin, Prof. K. Baberschke
2000 Postdoc, Fritz-Haber-Institut der Max-Planck-Gesellschaft
2000 Scientific Assistant, Freie Universität Berlin, Prof. M. Wolf
2005 Habilitation, experimental physics, Freie Universität Berlin
2009 Full Professor, University Duisburg-Essen
2016 - 2028 Spokesperson, Collaborative Research Center 1242
2020 - 2028 Review board of the German Research Foundation (DFG)

Visiting Scientist

1999 University of California at Berkeley, USA, Z. Q. Qiu
2005 University of Pittsburgh, USA, H. Petek
2007 Stanford University, SSRL, USA, A. Nilsson
2008 Stanford University, USA, Z. X. Shen
2022 University of Tokyo, ISSP, Japan, K. Okazaki

Awards

2006 Heisenberg Fellow of the DFG
2007 Karl-Scheel award, Physical Society of Berlin

Research interest

Femtosecond magnetization dynamics
Non-equilibrium dynamics of correlated electron materials
Ultrafast electron dynamics at interfaces

Selected Publications

M. Heckschen, Y. Beyazit, E. Shomali, F. Kuehne, J. Jayabalan, P. Zhou, D. Diesing, M.E. Gruner, R. Pentcheva, A. Lorke, B. Sothmann, U. Bovensiepen, *Spatio-Temporal electron propagation dynamics in Au/Fe/MgO(001) in nonequilibrium: Revealing single scattering events and the ballistic limit,* PRX Energy **2**, 043009 (2023).

C. Penschke, J. Thomas, C. Bertram, A. Michaelides, K. Morgenstern, P. Saalfrank, U. Bovensiepen, *Hydration at highly crowded interfaces*, Phys. Rev. Lett. **130**, 106202 (2023).

J. Thomas, C. Bertram, J. Daru, J. Patwari, I. Langguth, P. Zhou, D. Marx, K. Morgenstern, U. Bovensiepen, *Competition between Coulomb and van-der-Waals interactions in Xe-Cs+ aggregates on Cu(111) surfaces*, Phys. Rev. Lett. **127**, 266802 (2021).

Y. Beyazit, J. Beckord, P. Zhou, J. P. Meyburg, F. Kühne, D. Diesing, M. Ligges, U. Bovensiepen, *Local and nonlocal electron dynamics of Au/Fe/MgO(001) heterostructures analyzed by time-resolved two-photon photoemission spectroscopy*, Phys. Rev. Lett. **125**, 076803 (2020).

M. Ligges, I. Avigo, D. Golez, H. U. R. Strand, Y. Beyazit, K. Hanff, F. Diekmann, L. Stojchevska, M.Kalläne, K. Rossnagel, M. Eckstein, P. Werner, U. Bovensiepen, *Ultrafast doublon dynamics in photo-excited 1T-TaS_2,* Phys. Rev. Lett. **120**, 166401 (2018).

T. Frigge, B. Hafke, T. Witte, B. Krenzer, C. Streubühr, A. Samad Syed, V. Mikšic Trontl, Avigo, P. Zhou, M. Ligges, D. von der Linde, U. Bovensiepen, M. Horn-von Hoegen, S. Wippermann, A. Lücke, S. Sanna, U. Gerstmann, W. G. Schmidt, *Optically excited structural transition in atomic wires on surfaces at the quantum limit,* Nature **544**, 207 (2017).

J. D. Rameau, S. Freutel, A. F. Kemper, M. A. Sentef, J. K. Freericks, I. Avigo, M. Ligges, L. Rettig, Y. Yoshida, H. Eisaki, J. Schneeloch, R. D. Zhong, Z. J. Xu, G. D. Gu, P. D. Johnson, U. Bovensiepen, *Energy dissipation from a correlated system driven out of equilibrium,* Nature Commun. **7**, 13761 (2016).

A. Melnikov, I. Razdolski, T. Wehling, E. Papaioannou, V. Roddatis, P. Fumagalli, O. Aktsipetrov, A. Lichtenstein, U. Bovensiepen, *Ultrafast transport of laser-excited spin polarized carriers in Au/Fe/MgO(001),* Phys. Rev. Lett. **107**, 076601 (2011).

R. Cortés, L. Rettig, Y. Yoshida, H. Eisaki, M. Wolf, U. Bovensiepen, *Momentum-resolved ultrafast electron dynamics in superconducting* $Bi_2Sr_2CaCu_2O_{8+\delta}$, Phys. Rev. Lett. **107**, 097002 (2011).

P. S. Kirchmann, L. Rettig, X. Zubizarreta, V. M. Silkin, E.V. Chulkov, U. Bovensiepen, *Quasi-particle lifetimes in metallic quantum well nanostructures*, Nature Physics **6**, 782 (2010).

F. Schmitt, P. S. Kirchmann, U. Bovensiepen, R. G. Moore, L. Rettig, M. Krenz, J.-H. Chu, N. Ru, L. Perfetti, D. H. Lu, M. Wolf, I. Fisher, Z.-X. Shen, *Transient Electronic Structure and Melting of a Charge Density Wave in $TbTe_3$,* Science **321**, 1649 (2008).

C. Gahl, U. Bovensiepen, C. Frischkorn, M. Wolf, *Ultrafast dynamics of electron localization and solvation in ice layers on Cu(111),* Phys. Rev. Lett. **89**, 107402 (2002).

U. Bovensiepen, F. Wilhelm, P. Srivastava, P. Poulopoulos, M. Farle, A. Ney, K. Baberschke, *Two susceptibility maxima and element specific magnetizations in indirectly coupled ferromagnetic layers*, Phys. Rev. Lett. **81**, 2368 (1998).