

LIST OF PUBLICATIONS

PUBLICATIONS IN PEER REVIEW JOURNALS

- [1] A. Aschikhin, C. Behrens, S. Bohlen, J. Dale, N. Delbos, L. di Lucchio, E. Elsen, J.-H. Erbe, M. Felber, B. Foster, L. Goldberg, J. Grebenyuk, J.-N. Gruse, B. Hidding, Z. Hu, S. Karstensen, A. Knetsch, O. Kononenko, V. Libov, K. Ludwig, A. Maier, A. M. de la Ossa, **T. Mehrling**, C. Palmer, F. Pannek, L. Schaper, H. Schlarb, B. Schmidt, S. Schreiber, J.-P. Schwinkendorf, H. Steel, M. Streeter, G. Tauscher, V. Wacker, S. Weichert, S. Wunderlich, J. Zemella, and J. Osterhoff. *The FLASHForward facility at DESY*. **Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment**, 806:175 – 183, 2016. URL <http://www.sciencedirect.com/science/article/pii/S0168900215012103>.
- [2] **T. Mehrling**, R. Robson, J.-H. Erbe, and J. Osterhoff. *Efficient numerical modelling of the emittance evolution of beams with finite energy spread in plasma wakefield accelerators*. **Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment**, 829:367 – 371, 2016. URL <http://www.sciencedirect.com/science/article/pii/S0168900216001418>. 2nd European Advanced Accelerator Concepts Workshop - {EAAC} 2015.
- [3] A. Martinez de la Ossa, **T. J. Mehrling**, L. Schaper, M. J. V. Streeter, and J. Osterhoff. *Wakefield-induced ionization injection in beam-driven plasma accelerators*. **Physics of Plasmas**, 22(9):–, 2015. URL <http://scitation.aip.org/content/aip/journal/pop/22/9/10.1063/1.4929921>.
- [4] R. Robson, **T. Mehrling**, and J. Osterhoff. *Phase-space moment-equation model of highly relativistic electron-beams in plasma-wakefield accelerators*. **Annals of Physics**, 356(0):306 – 319, 2015. URL <http://www.sciencedirect.com/science/article/pii/S0003491615000998>.
- [5] **T. Mehrling**, C. Benedetti, C. B. Schroeder, and J. Osterhoff. *HiPACE: a quasi-static particle-in-cell code*. **Plasma Physics and Controlled Fusion**, 56(8):084012, July 2014. URL <http://stacks.iop.org/0741-3335/56/i=8/a=084012>.
- [6] J. Grebenyuk, A. M. de la Ossa, **T. Mehrling**, and J. Osterhoff. *Beam-driven plasma-based acceleration of electrons with density down-ramp injection at FLASHForward*. **Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment**, 740(0):246 – 249, March 2014. URL <http://www.sciencedirect.com/science/article/pii/S0168900213014356>.
- [7] A. Martinez de la Ossa, C. Behrens, J. Grebenyuk, **T. Mehrling**, L. Schaper, and J. Osterhoff. *High-quality electron beams from field-induced ionization injection in the strong blow-out regime of beam-driven plasma accelerators*. **Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment**, 740(0):231 – 235, March 2014. URL <http://www.sciencedirect.com/science/article/pii/S016890021301334X>.
- [8] A. Martinez de la Ossa, J. Grebenyuk, **T. Mehrling**, L. Schaper, and J. Osterhoff. *High-Quality Electron Beams from Beam-Driven Plasma Accelerators by Wakefield-Induced Ionization Injection*. **Phys. Rev. Lett.**, 111:245003, December 2013. URL <http://link.aps.org/doi/10.1103/PhysRevLett.111.245003>.

- [9] **T. Mehrling**, J. Grebenyuk, F. S. Tsung, K. Floettmann, and J. Osterhoff. *Transverse emittance growth in staged laser-wakefield acceleration*. **Phys. Rev. ST Accel. Beams**, 15:111303, November 2012. URL <http://link.aps.org/doi/10.1103/PhysRevSTAB.15.111303>.

CONFERENCE PROCEEDINGS

- [10] *Simulations Study for Self-Modulation Experiment at PITZ*, 2015. URL <http://jacow.org/IPAC2015/papers/wepwa005.pdf>. Proceedings of the 6th International Particle Accelerator Conference, Richmond, VA, USA.
- [11] *Radiation Generation in Plasma-Based Accelerators with Controlled Electron Injection*, volume 47 of *NIC Series*. Verlag des Forschungszentrums Jülich, February 2014.
- [12] *Simulations of laser-wakefield acceleration with external electron-bunch injection for REGAE experiments at DESY*, volume 1507, December 2012. URL <http://scitation.aip.org/content/aip/proceeding/aipcp/10.1063/1.4773781>. Proceedings of the AAC 2012, Austin, USA.
- [13] *Laser-Wakefield Acceleration with External Bunch Injection at REGAE*, September 2012. URL <http://accelconf.web.cern.ch/AccelConf/rupac2012/papers/moppa005.pdf>. Proceedings of RUPAC 2012, Saint-Petersburg, Russia.

THESES

- [14] **T. J. Mehrling**. *Theoretical and numerical studies on the transport of transverse beam quality in plasma-based accelerators*. **Dissertation (PhD thesis)**, Universität Hamburg, Institut für Experimentalphysik, Luruper Chaussee 149, 22761 Hamburg, Germany, August 2014. URL <http://ediss.sub.uni-hamburg.de/volltexte/2014/7029/>.
- [15] **T. Mehrling**. *Studying laser wakefield acceleration of relativistic electron bunches in inhomogeneous plasma with PIC simulations*. **Diplomarbeit (Master's thesis)**, Technische Universität München Arcisstraße 11, 80333 München, March 2011.