

# LIST OF PUBLICATIONS

## REFEREED JOURNAL PAPERS

- [1] T. J. Mehrling, C. Benedetti, C. B. Schroeder, E. Esarey, and W. P. Leemans. *Suppression of beam hosing in plasma accelerators with ion motion*. **submitted**, October 2018.
- [2] G. Loisch, G. Asova, P. Boonpornprasert, R. Brinkmann, Y. Chen, J. Engel, J. Good, M. Gross, F. Grüner, H. Huck, D. Kalantaryan, M. Krasilnikov, O. Lishilin, A. M. de la Ossa, T. J. Mehrling, D. Melkumyan, A. Oppelt, J. Osterhoff, H. Qian, Y. Renier, F. Stephan, C. Tenholt, V. Wohlfarth, and Q. Zhao. *Observation of High Transformer Ratio Plasma Wakefield Acceleration*. **Phys. Rev. Lett.**, 121:064801, Aug 2018. URL <https://link.aps.org/doi/10.1103/PhysRevLett.121.064801>.
- [3] A. Martinez de la Ossa, T. J. Mehrling, and J. Osterhoff. *Intrinsic Stabilization of the Drive Beam in Plasma-Wakefield Accelerators*. **Phys. Rev. Lett.**, 121:064803, Aug 2018. URL <https://link.aps.org/doi/10.1103/PhysRevLett.121.064803>.
- [4] M. Gross, J. Engel, J. Good, H. Huck, I. Isaev, G. Koss, M. Krasilnikov, O. Lishilin, G. Loisch, Y. Renier, T. Rublack, F. Stephan, R. Brinkmann, A. Martinez de la Ossa, J. Osterhoff, D. Malyutin, D. Richter, T. Mehrling, M. Khojayan, C. B. Schroeder, and F. Grüner. *Observation of the Self-Modulation Instability via Time-Resolved Measurements*. **Phys. Rev. Lett.**, 120:144802, Apr 2018. URL <https://link.aps.org/doi/10.1103/PhysRevLett.120.144802>.
- [5] T. J. Mehrling, C. Benedetti, C. B. Schroeder, A. M. de la Ossa, J. Osterhoff, E. Esarey, and W. P. Leemans. *Accurate modeling of the hose instability in plasma wakefield accelerators*. **Physics of Plasmas**, 25(5):056703, 2018. URL <https://doi.org/10.1063/1.5017960>.
- [6] A. Martinez de la Ossa, Z. Hu, M. J. V. Streeter, T. J. Mehrling, O. Kononenko, B. Sheeran, and J. Osterhoff. *Optimizing density down-ramp injection for beam-driven plasma wakefield accelerators*. **Phys. Rev. Accel. Beams**, 20:091301, Sep 2017. URL <https://link.aps.org/doi/10.1103/PhysRevAccelBeams.20.091301>.
- [7] R. Brinkmann, N. Delbos, I. Dornmair, M. Kirchen, R. Assmann, C. Behrens, K. Floettmann, J. Grebenyuk, M. Gross, S. Jalas, T. Mehrling, A. Martinez de la Ossa, J. Osterhoff, B. Schmidt, V. Wacker, and A. R. Maier. *Chirp Mitigation of Plasma-Accelerated Beams by a Modulated Plasma Density*. **Phys. Rev. Lett.**, 118:214801, May 2017. URL <https://link.aps.org/doi/10.1103/PhysRevLett.118.214801>.
- [8] T. J. Mehrling, R. A. Fonseca, A. Martinez de la Ossa, and J. Vieira. *Mitigation of the Hose Instability in Plasma-Wakefield Accelerators*. **Phys. Rev. Lett.**, 118:174801, Apr 2017. URL <https://link.aps.org/doi/10.1103/PhysRevLett.118.174801>.
- [9] R. E. Robson, T. J. Mehrling, and J. Osterhoff. *Great moments in kinetic theory: 150 years of Maxwells (other) equations*. **European Journal of Physics**, 38(6):065103, 2017. URL <http://stacks.iop.org/0143-0807/38/i=6/a=065103>.
- [10] 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):–, September 2015. URL <http://scitation.aip.org/content/aip/journal/pop/22/9/10.1063/1.4929921>.
- [11] 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, May 2015. URL <http://www.sciencedirect.com/science/article/pii/S0003491615000998>.

- [12] 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>.
- [13] 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>.
- [14] 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>.

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- [16] M. Gross, O. Lishilin, G. Loisch, P. Boonpornprasert, Y. Chen, J. Engel, J. Good, H. Huck, I. Isaev, M. Krasilnikov, X. Li, R. Niemczyk, A. Oppelt, H. Qian, Y. Renier, F. Stephan, Q. Zhao, R. Brinkmann, A. M. de la Ossa, J. Osterhoff, F. J. Grüner, T. Mehrling, C. B. Schroeder, and I. Will. *Characterization of self-modulated electron bunches in an argon plasma*. **Journal of Physics: Conference Series**, 1067(4):042012, 2018. URL <http://stacks.iop.org/1742-6596/1067/i=4/a=042012>.
- [17] V. Libov, A. Aschikhin, J. Dale, R. D'Arcy, K. Ludwig, A. Martinez de la Ossa, T. Mehrling, J.-H. Roeckemann, L. Schaper, B. Schmidt, S. Schröder, S. Wesch, J. Zemella, and J. Osterhoff. *FLASHForward X-2: Towards beam quality preservation in a plasma booster*. **Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment**, pages –, 2018. URL <https://www.sciencedirect.com/science/article/pii/S0168900218302171>.
- [18] P. Niknejadi, R. D'Arcy, M. C. Kaluza, A. Knetsch, V. Libov, A. M. de la Ossa, T. J. Mehrling, J. Osterhoff, C. A. J. Palmer, K. Poder, A. SŁvert, L. Schaper, M. B. Schwab, and C. Wirth. *Status of the Transverse Diagnostics at FLASHForward*. **Journal of Physics: Conference Series**, 1067(4):042010, 2018. URL <http://stacks.iop.org/1742-6596/1067/i=4/a=042010>.
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- [22] 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. Martinez 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, January 2016. URL <http://www.sciencedirect.com/science/article/pii/S0168900215012103>.
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- [25] J. Grebenyuk, T. Mehrling, F. S. Tsung, K. Floettman, and J. Osterhoff. *Simulations of laser-wakefield acceleration with external electron-bunch injection for REGAE experiments at DESY*. **AIP Conference Proceedings**, 1507:688–692, December 2012. URL <http://scitation.aip.org/content/aip/proceeding/aipcp/10.1063/1.4773781>. Proceedings of the AAC 2012, Austin, USA.

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- [26] C. Benedetti, C. B. Schroeder, T. J. Mehrling, E. Esarey, and W. P. Leemans. *Emittance preservation in plasma-based accelerators with ion motion*. In *9th International Particle Accelerator Conference (IPAC'18)*, 2018.
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- [30] G. Pathak, C. Benedetti, M. Groß, F. Grüner, A. Martinez de la Ossa, T. Mehrling, J. Osterhoff, C. Schroeder, and F. Stephan. *Simulations Study for Self-Modulation Experiment at PITZ*. In *Proceedings, 6th International Particle Accelerator Conference (IPAC 2015): Richmond, Virginia, USA, May 3-8, 2015*, page WEPWA005, 2015. URL <http://accelconf.web.cern.ch/AccelConf/IPAC2015/papers/wepwa005.pdf>.
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## BOOK CHAPTERS

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- [36] 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/>.
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