

Abstract Submitted
for the DPP19 Meeting of
The American Physical Society

Developing shaped bunches to improve beam loading in laser wake-field accelerators¹ ANDRE ANTOINE, ALEXANDER THOMAS, YONG MA, DANIEL SEIPT, University of Michigan — Important to successful achievement and integration of monoenergetic laser wake-field acceleration into mainstream use in science is optimization of the injection control process. In addition to low transverse emittance, a significant challenge is accelerating low energy spread beams. One such technique to improve the final energy spread of the electron beam is achievement of beam loading by way of electron bunch shaping. Optimization of bunch parameters can have a significant effect on other bunch parameters, leading to significant increases in quality of monoenergetic Wakefield produced electron beams. Presented here are studies on the production of shaped bunches by tailoring the plasma profile.

¹This work is supported in part by the NSF under grant 1804463. The authors would like to acknowledge the OSIRIS Consortium, consisting of UCLA and IST (Lisbon, Portugal) for the for providing access to the OSIRIS 4.0 framework.

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Date submitted: 03 Jul 2019

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