Developing shaped bunches to improve beam loading in laser wake-field accelerators\textsuperscript{1} 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.

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