

Abstract Submitted
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**Ring-Shaped Distributions of Monoenergetic Electron Beams
Generated via Density Discontinuities in a Two-Stage Gas Cell**
ZHEN ZHAO, KEEGAN BEHM, BIXUE HOU, VLADIMIR CHVYKOV, ANA-
TOLY MAKSIMCHUK, VICTOR YANOVSKY, ALEXANDER THOMAS, KARL
KRUSHELNICK, University of Michigan — Using two-stage gas cells for laser wake-
field acceleration experiments, we measure clear ring-shaped angular distributions
of monoenergetic electron beams. These “halo”-like structures are observed both
on an on-axis and a magnet spectrometer imaging system. Initial assessment of the
beam-halos suggests that they are most consistently generated in a gas cell where
opposing flows create a type of density discontinuity between the stages. Generating
such well-defined angular distributions of mono-energetic electrons may be useful for
plasma-based X-ray sources.

Zhen Zhao
University of Michigan

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