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Experimental Progress of Passive Plasma Lens at FACET-II

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The thin, underdense, passive plasma lens comprises a sub-millimeter scale, laser-ionized plasma in the outflow of a supersonic gas jet. It promises compact, strong, tunable, axisymmetric focusing of intense electron beams and is ideally suited for matching beams into and out of plasma wakefield accelerator stages. It can also be used for reducing divergence of high-brightness plasma-injected beams as they exit the plasma source. Results from experiments at SLAC's FACET-II facility will be presented demonstrating strong focusing of a 10 GeV electron beam to a small waist in vacuum downstream of the plasma lens.

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