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Optimizing the Laser Optics Set-up to Lower the Emittance of the Argonne Wake?eld Accelerator[1] TAMARA GONZALEZ ACEVEDO, University of Puerto Rico, Mayaguez — The Argonne Wake?eld Accelerator beamline is bolstered by a radio frequency photoinjector using a customized laser system to the cathode. This laser system includes an optics set-up with Microlenses Arrays (MLA) to create a homogenized laser beam spot and to improve the laser beam quality. The purpose of this research was to enhance the current optic set-up to reduce the laser intensity loss. The outcomes of this project were the following: testing experimentally the optics set-up and implementation of imaging system; improvement in the laser beam quality; and reduced laser loss due to large laser beam size at the lens.

[1]Optimizing the Laser Optics Set-up to Lower the Emittance of the Argonne Wakefield Accelerator

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