

Abstract Submitted  
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**Incorporation of a Truncated Azimuthal Mode Expansion into the OSIRIS PIC Simulation** ASHER DAVIDSON, UCLA — Here we incorporated a new algorithm into the OSIRIS simulation framework. The electromagnetic fields are solved using a truncated Fourier expansion along the poloidal direction in cylindrical coordinates. This provides a three-dimensional simulation of a physical system with a low-modal azimuthal symmetry while maintaining a computational load similar to two-dimensional simulations. Many problems involving laser or beam-driven plasma wakefield accelerators fit this description. Preliminary results on LWFAs and PWFAs using this computational method will be provided.

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