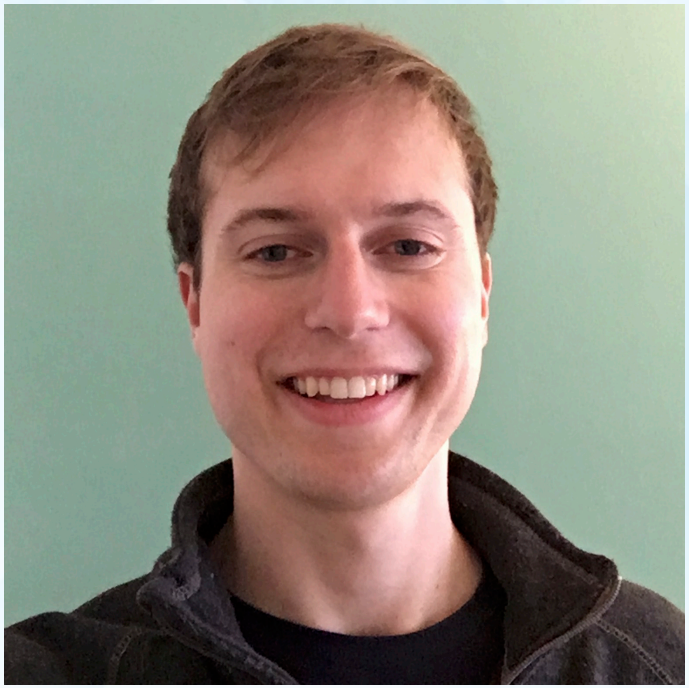
Plasma Physics Seminar

UCLA College | Physical Sciences Physics & Astronomy

Physics & Astronomy Building (PAB) Room 4-330
Friday December 5th at 12:30 PM
Via Zoom: https://ucla.zoom.us/j/92785449357?pwd=SVBTSko3bTdEUW03dzQwNks1Q2lKZz09

Computational Modeling of Laser Wakefield Acceleration with Spatiotemporally Structured Laser Pulses

Jacob Pierce (UCLA)



Spatiotemporally structured laser pulses have been proposed to enable or enhance a variety of techniques in laser-plasma interactions. For laser wakefield acceleration (LWFA) in particular, flying focus laser pulses have been proposed to enable acceleration of electrons to TeV energies over a single meter-scale plasma stage. After reviewing the current status of LWFA driven by spatiotemporally structured laser pulses, I will present an overview of my doctoral research on this topic: (1) the framework of Arbitrarily Structured Laser (ASTRL) pulses, which extend the ability to conceptualize, design, and model spatiotemporally structured light; and (2) recent results on the application of ASTRL pulses to LWFA. Opportunities for future work will be shared.

Host: Derek Schaeffer