

ULTRA-INTENSE LASER-PLASMA INTERACTIONS: SIMULATIONS AND DATA SCIENCE

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The brightest laser pulses interact with matter to generate plasmas with extreme high-energy density conditions. Laser-plasma interactions can accelerate particles to relativistic energies and have a variety of potential applications in medicine, materials science, and fusion energy. I explore these interactions using large-scale computer simulations and statistical/machine learning methods applied to experimental data from thousands of laser shots from around the world. This talk provides an overview of laser-driven proton acceleration, the particle-in-cell simulation method, and laser fusion. I highlight contributions by undergraduate students and discuss future opportunities for Wooster students to contribute to my research.

PHYSICS COLLOQUIUM



THURSDAY, JANUARY 22ND
TAYLOR HALL 111
AT 11:00AM




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