Glint Model for New Diagnostic for the National Ignition Facility

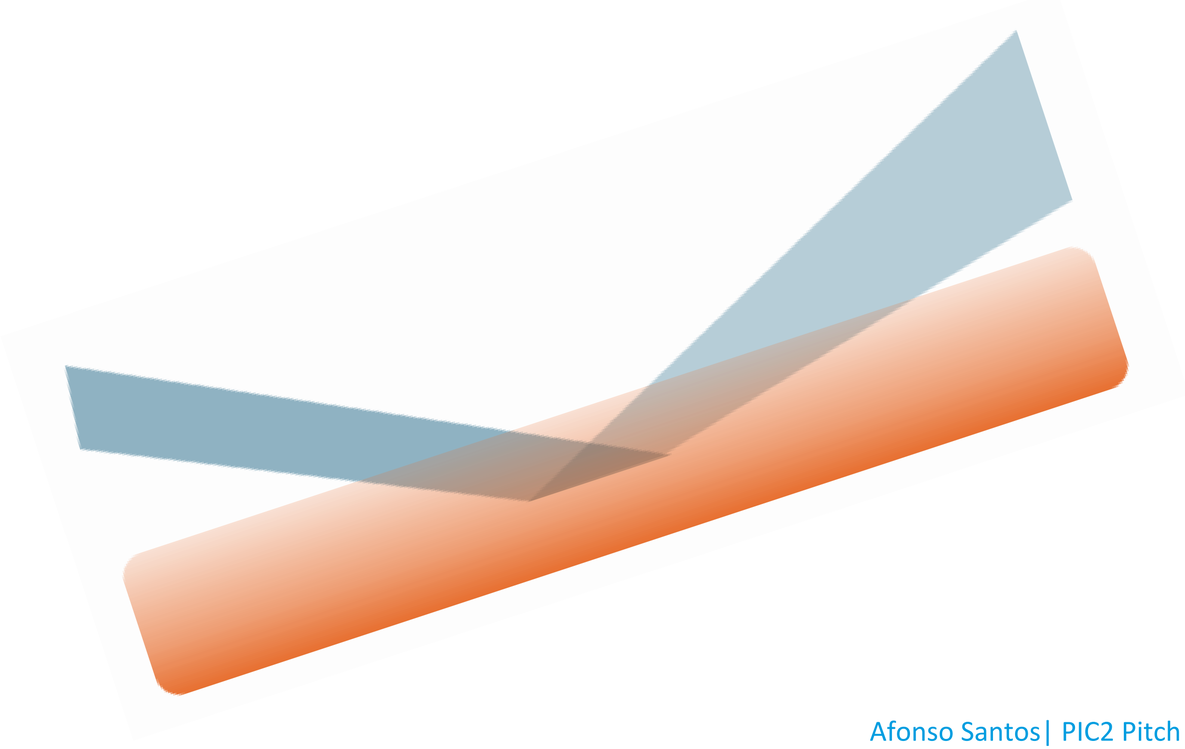
Scientific Project by:

Afonso Santos

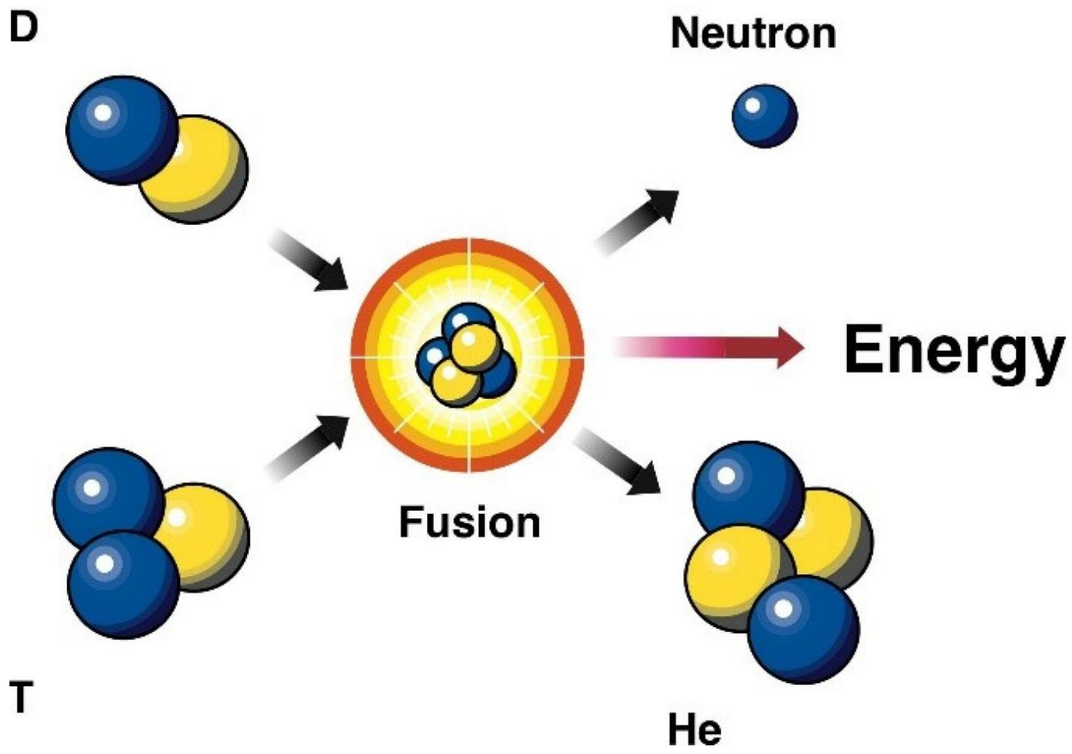
Supervisors:

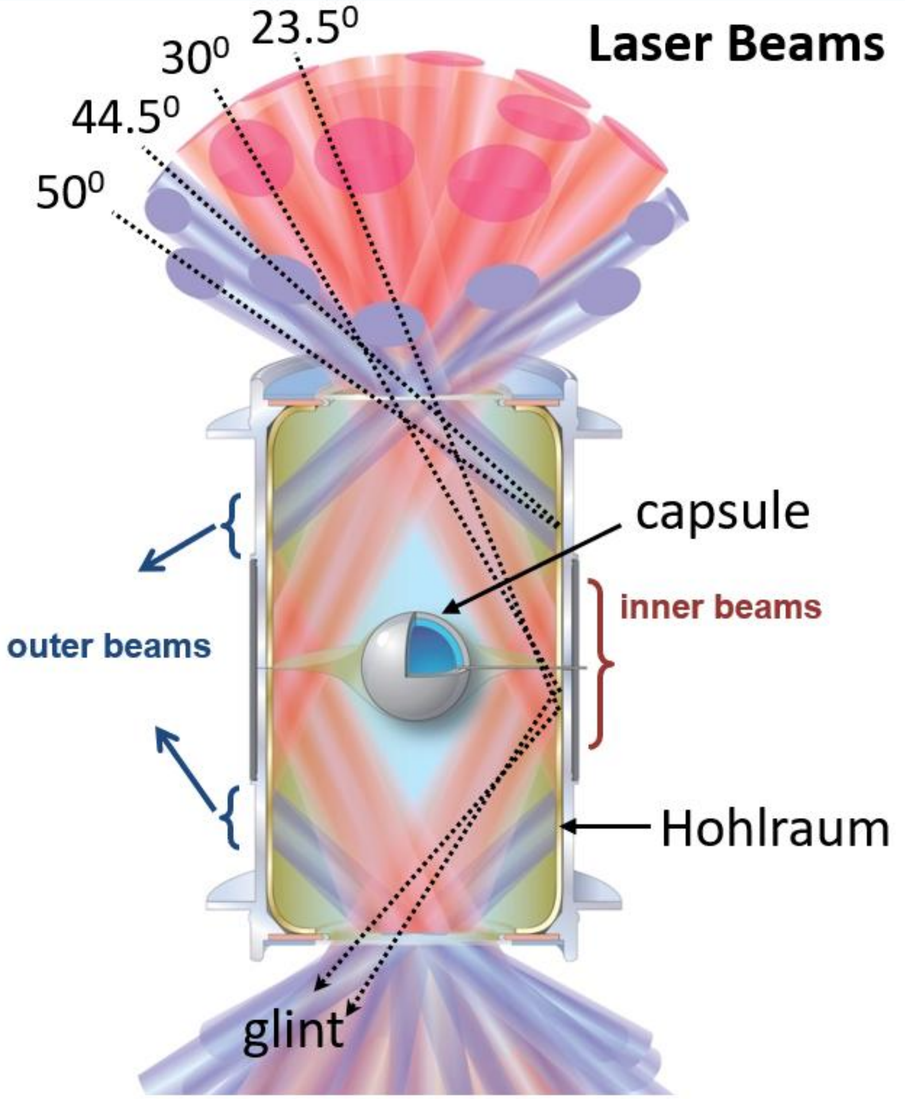
Luís Oliveira e Silva,

Nuno Candeias Lemos



ICF has made great strides towards realizing nuclear fusion as an energy source

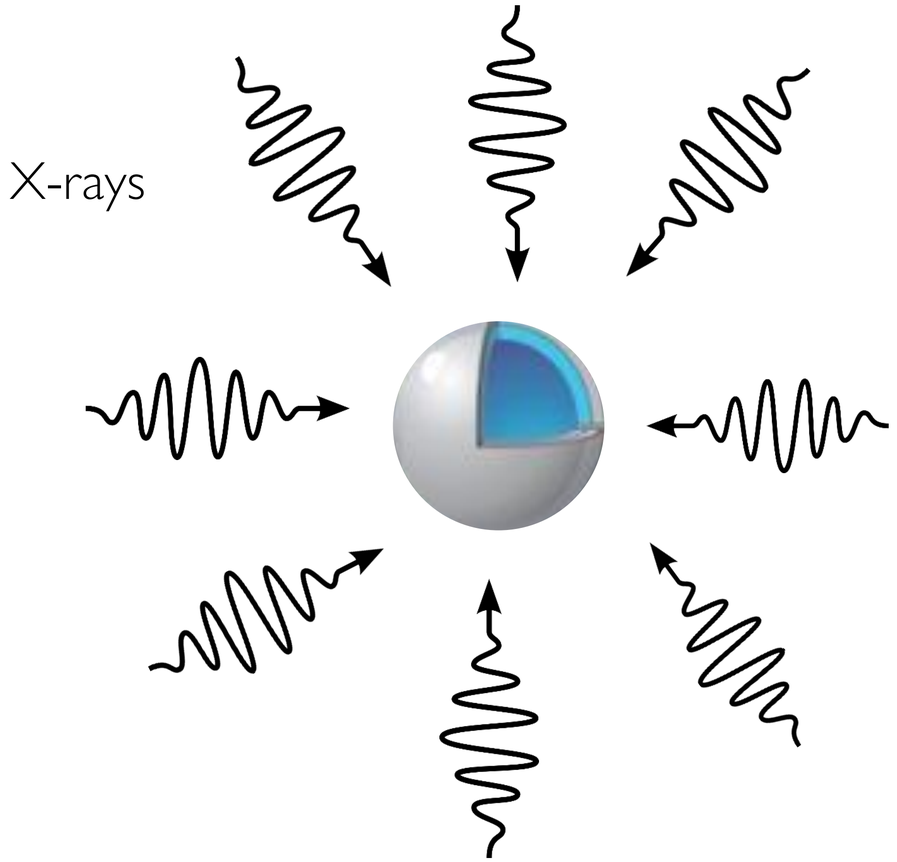




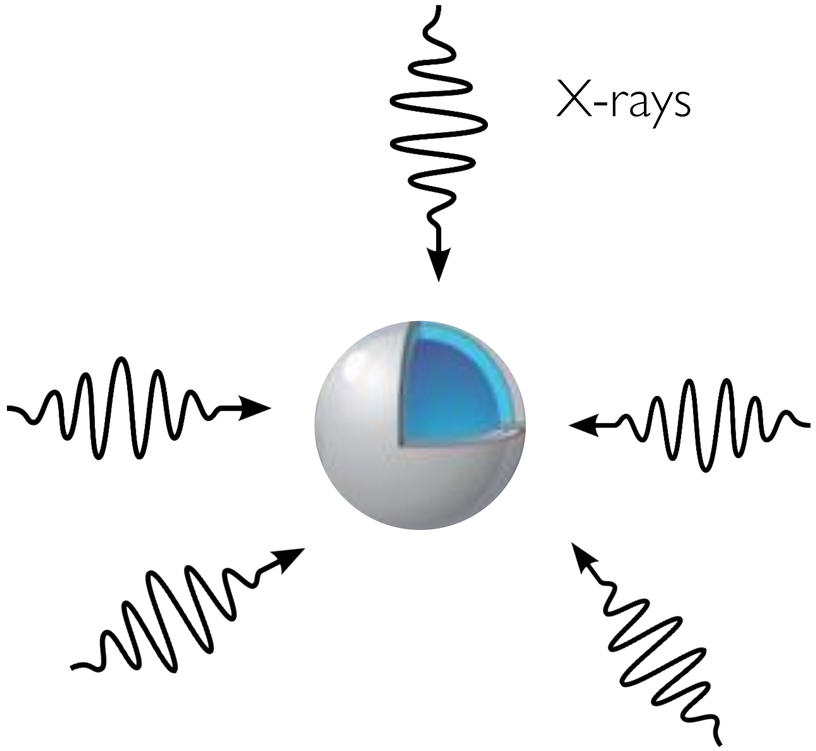
[1] National ignition facility and Photon Science

Understanding the x-ray drive deficit is crucial

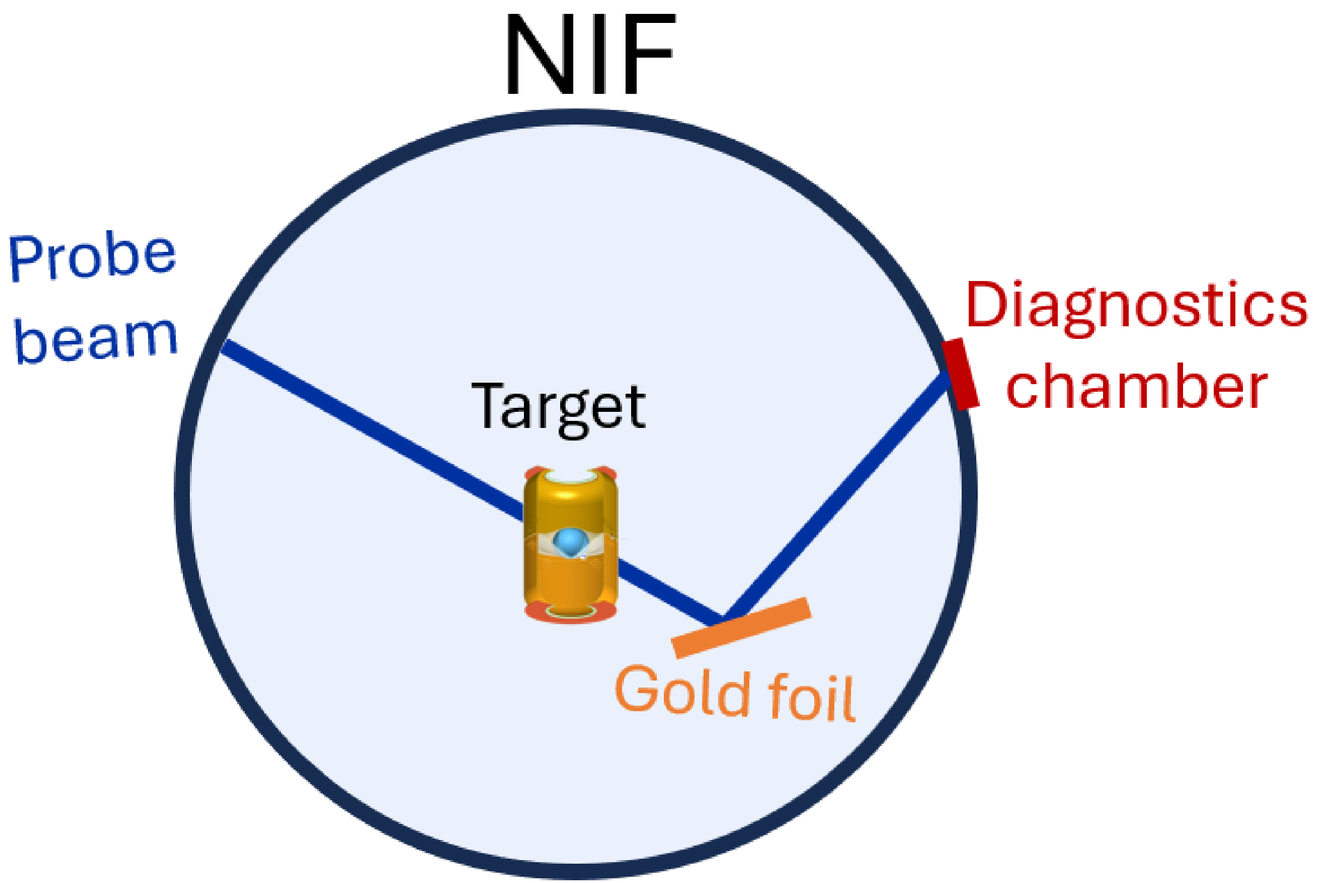
Expectation

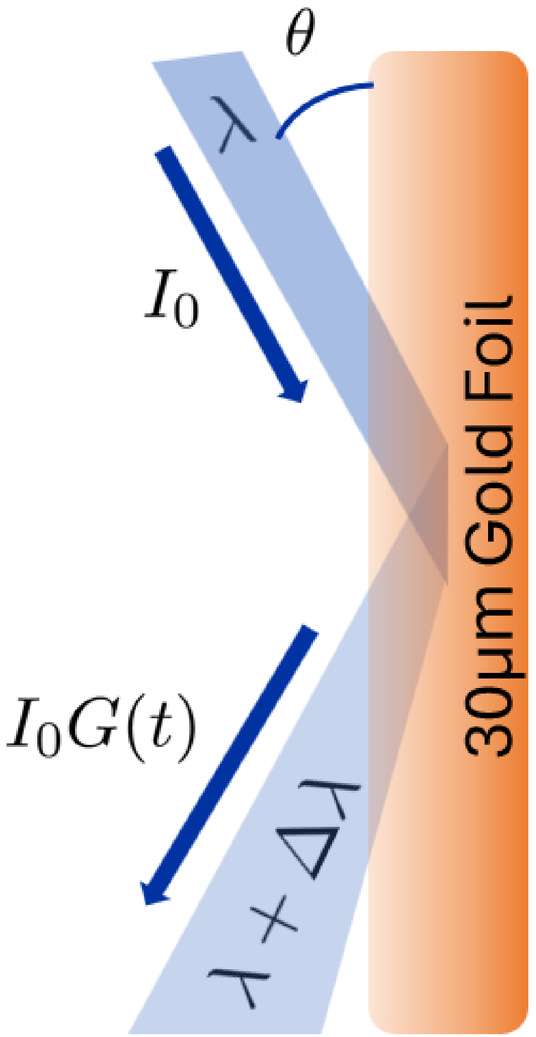


Reality



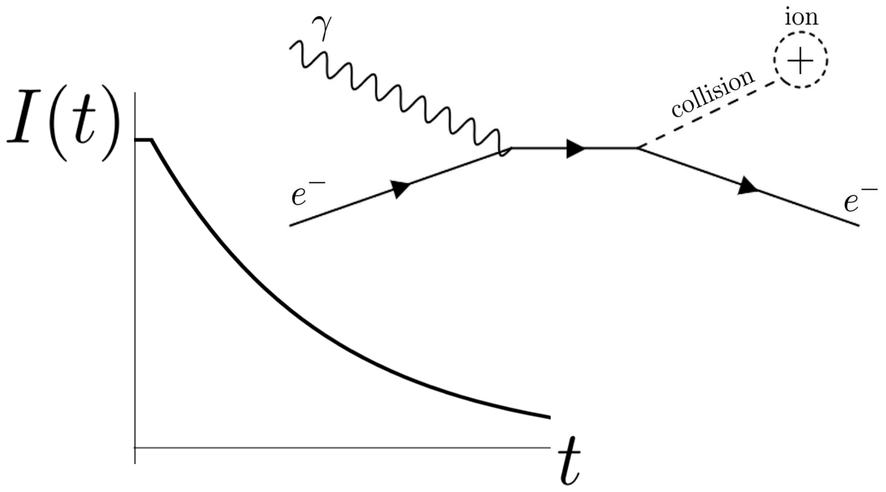
A new post-shot diagnostic has been developed and tested



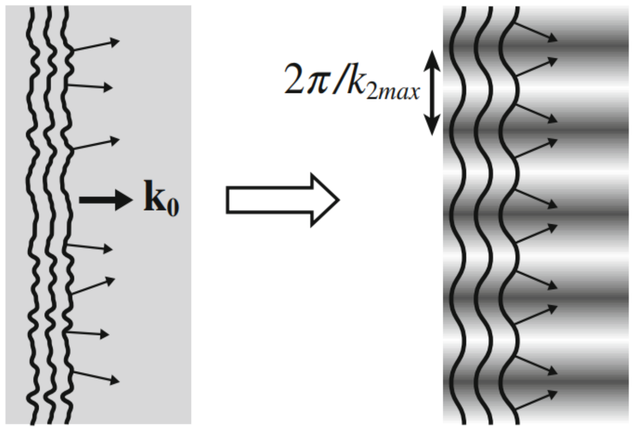


The new diagnostic must account for laser-plasma interactions

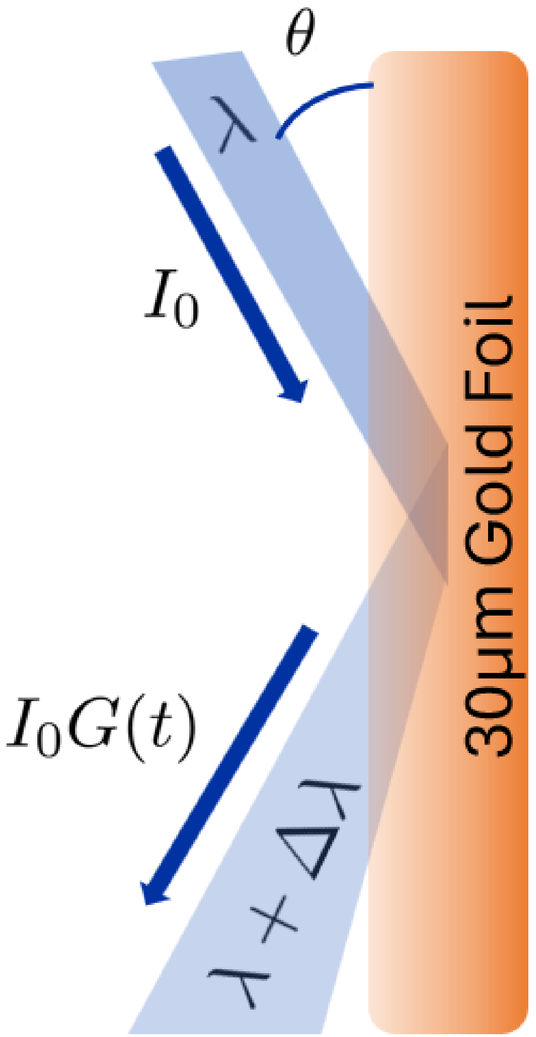
Inverse Bremsstrahlung Absorption:



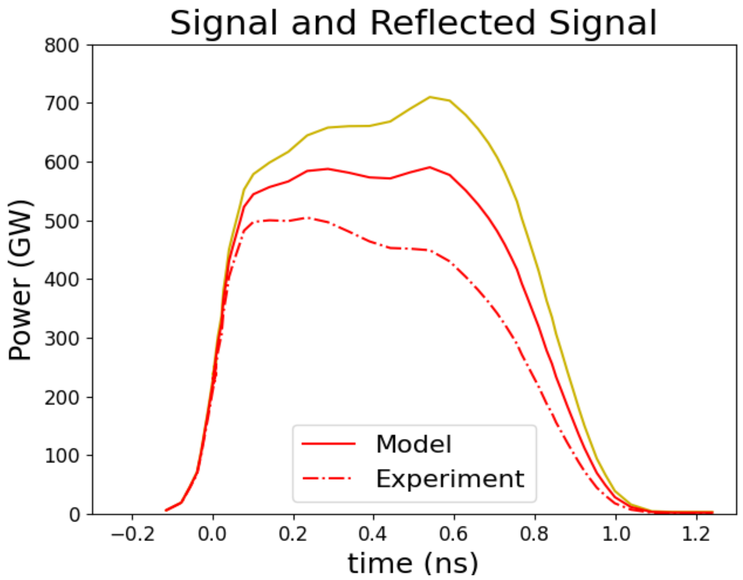
Thermal Filamentation:

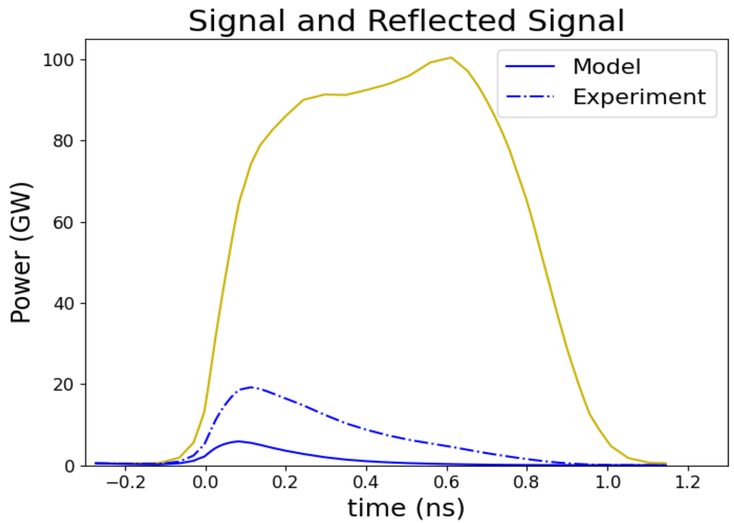


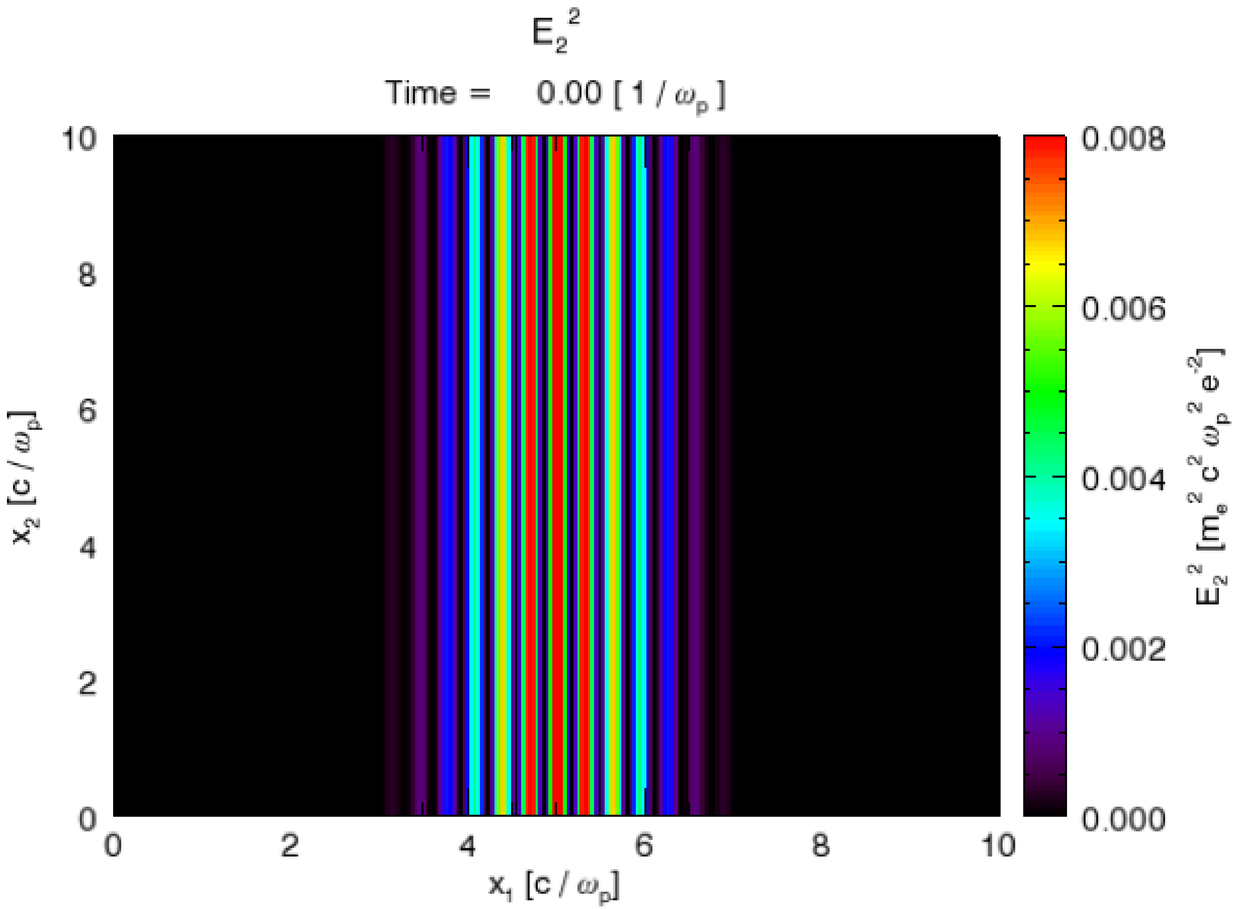
[2] Pierre Michel, *Introduction to Laser-Plasma Interactions*, Ch. 7.3



Theory and simulations of laser glint and thermal filamentation are being developed







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