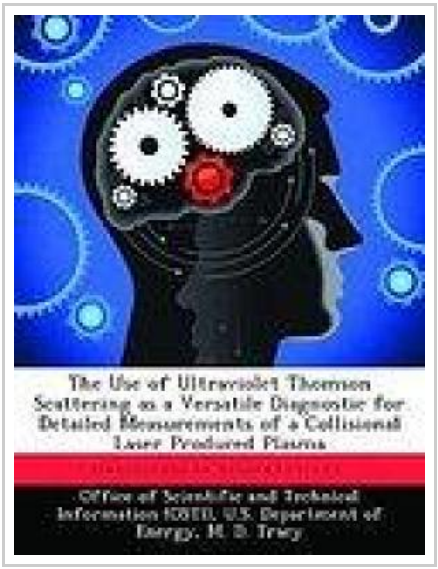

The Use of Ultraviolet Thomson Scattering as a Versatile Diagnostic for Detailed Measurements of a Collisional Laser Produced Plasma

By U. S. Department of Energy Office of Scientific and Technical Information (OSTI)

Bibliioscholar Jan 2013, 2013. Taschenbuch. Book Condition: Neu. 246x189x15 mm. This item is printed on demand - Print on Demand Neuware - Collective Thomson scattering from ion-acoustic waves at 266nm is used to obtain spatially resolved, two-dimensional electron density, sound speed, and radial drift profiles of a collisional laser plasma. An ultraviolet diagnostic wavelength minimizes the complicating effects of inverse bremsstrahlung and refractive turning in the coronal region of interest, where the electron densities approach n/10. Laser plasmas of this type are important because they model some of the aspects of the plasmas found in high-gain laser-fusion pellets irradiated by long pulse widths where the laser light is absorbed mostly in the corona. The experimental results and LASNEX simulations agree within a percent standard deviation of 40% for the electron density and 50% for the sound speed and radial drift velocity. Thus it is shown that the hydrodynamics equations with classical coefficients and the numerical approximations in LASNEX are valid models of laser-heated, highly collisional plasmas. The versatility of Thomson scattering is expanded upon by extending existing theory with a Fokker-Planck based model to include plasmas that are characterized by (0 k) and ZT/T, where k is the ion-...

Reviews

Basically no terms to clarify. It is actually writter in basic terms rather than confusing. I found out this ebook from my dad and i suggested this book to find out.

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