

**POSTER SESSION
ABSTRACTS**

**LASER PLASMA SCIENCE
AND
APPLICATIONS**

April 9th, 1990

The Cosener's House

Abingdon

21 Experimental Observations of L and M shell Spectra from KrF Laser Produced Plasmas

V Barrow, J Edwards, O Willi, Imperial College

The time integrated L and M shell spectra, obtained when solid targets were irradiated with single, 3.5 ps. KrF laser pulses with irradiances of up to 10^{17} W. cm⁻² are presented. Modelling of the experimental conditions is shown to be consistent with the experimental results.

22 Investigations of Pressure Nonuniformity in Laser-Irradiated Targets using Incoherent Optical Smoothing.

I R G Williams, G J Rickard, A R Bell, Blackett Laboratory

From analytic models of the ablation process in laser-plasma experiments, as well as simulations with Fokker-Planck and Spitzer codes, we have identified a new effect, thermal inertia smoothing. This effect results in a smoother Fokker-Planck temporal and spatial variation of the ablation pressure than that for Spitzer, for the same applied time varying laser intensity. It is therefore advantageous for incoherent optical smoothing schemes. This is especially true at early times in the laser pulse (100 ps)

23 Suppression of stimulated Brillouin scattering using Induced Spatial Incoherence

T Afshar-Rad, M Desselberger, L Gizzi, F Khattak, O Willi, Blackett Laboratory

A Guillitti, Pisa, Italy

We report on measurements made of the level of Stimulated Brillouin Backscattering for broad-band laser illumination of a long scalelength preformed plasma. The effectiveness of the Induced Spatial Incoherence smoothing system to suppress this instability has been studied. It was found that at low irradiances, the level of Brillouin backscatter was significantly reduced by the application of this smoothing technique, but that at high irradiances there was little benefit.