IN BRIEF

This volume of the LLE Review contains articles on the activities in the GDL and OMEGA laser facilities, new theoretical and experimental developments in the physics of laser-produced plasmas, uniformity calculations for a direct-drive fusion reactor, technological advances in picosecond-measurement techniques, and NLUF activities during this quarter (April-June 1984).

Some highlights of these articles are

- A new model has been proposed for the Raman spectra observed in laser experiments. This model predicts an appreciable "up-scattered" spectral component which has now been observed.
- Recent UV-laser/plasma interaction experiments have significantly extended our understanding of the coronal plasma. In particular, some prominent features of the coronal spectra are shown to be especially suitable for diagnosing the coronal electron temperature.
- An analytical study of illumination uniformity has been carried out for direct-drive fusion reactors, using up to 96 laser beams to irradiate the fuel pellet. By increasing the number of beams, the illumination uniformity is made less sensitive to beam perturbations.

- Coplanar strip lines have replaced balanced transmission lines in the LLE sampling system to measure fast electrical transients. Fabrication is simpler and temporal resolution is already equal to the best attained previously.
- A high-repetition-rate pulsed laser source with extremely stable output energy has been built and characterized. This source substantially improves our capability to measure rapid transient phenomena.

In addition, the University of Rochester's Trustees' Visiting Committee for Major Projects and Programs reviewed the laboratory in February. The committee reports to the president of the university on all major university programs. Members of the committee who participated in the LLE review were Messrs. G. Poke, D. Potter, C. W. Rea, L. Simon, and C. Chandler (chairman). The laboratory received a highly favorable report from the committee — "... We congratulate the LLE leadership and university administration on the achievements of the last two years...."

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Optical alignment of the subpicosecond electro-optic sampling system is fine tuned by Kevin Meyer, a graduate student in physics and a member of the Picosecond Research Group. The system is used to study ultrafast electrical signals.