

Introduction

This double issue contains mostly papers which were selected as significant advances reported at the 17th European Conference on Laser Interaction with Matter in Rome 18–22 November 1985 (ECLIM 85) under the organization of Prof. Angelo Caruso, ENEA, Energy Research Centre 00044, Frascati, Roma. For many years, the ECLIM conferences have presented significant results in the field and it is the first time, thanks to the decision of Angelo Caruso, that substantial papers of the conference are published in this form for quick documentation and for the sake of the progress achieved by the authors.

At the ECLIM conferences many of the results presented are often still in the stage of discussion and may this remain so in the future. This is the reason why not all the papers presented were appropriate for this special issue. Other papers were not included because publication was already arranged or they were in print. For example, the *fulminant* results presented by Chiyoe Yamanaka (Osaka University) on the first achievement of volume compression of fusion pellets by lasers without central compression and shocks with the highest nuclear reaction gains; these results are in print from the conference where they were first disclosed some days before ECLIM 85, in *Laser Interaction and Related Plasma Phenomena*, Vol. 7 and are not included here.

Though the conference is a European one, contributions from around the world are traditionally presented, e.g. from D. Giovanielli (Los Alamos), A. A. Offenberger *et al.* (Uni. Alberta), J. A. Tarvin (KMS Fusion), A. Ng *et al.* (Uni. Brit. Columbia). There are contributions on a new technique to determine the mass of the implosion in pellets by S. Denus *et al.* (Microfusion Warsaw and Lebedev Inst. Moscow), a review of the powerful programme at Limeil-Valenton, France by E. Buresi *et al.* and a detailed analysis of experiments with several hundred megabar pressures by Fabbro *et al.* (Ecole Polyt., Palaiseau). Papers on x-ray techniques were presented by J. C. Gauthier *et al.* (Palaiseau), K. Eidmann *et al.* (Max-Planck-Inst. Garching) and W. Lampart *et al.* (Uni. Bern). There are papers on radiative transport and preheat by H. Szychman *et al.* (SOREQ, Israel), on the space-time structure of laser pulses by A. Caruso *et al.* (ENEA, Frascati), controlled coherence by Schönagel *et al.* (Acad., Berlin-DDR) an iodine laser with a plasma mirror by J. Schmiedberger *et al.* (Czechosl. Acad. Prague) and an extensive theoretical analysis on directly driven ICF targets by G. Velarde with 14 co-authors (Uni. Madrid). With all the other papers, this issue represents proceedings of the conference in the form of refereed publications.

Thanks are due to Professor Caruso for his promotion of this project, and to all the authors for their cooperation. May these papers again be a contribution to advancement of knowledge in the exciting field of Laser and Particle Beams.

Heinrich Hora