

**A GeV Laser Wakefield Accelerator driven by a T<sup>3</sup> Laser,** A. OGATA, H. NAKANISHI, K. NAKAJIMA,

M. ARINAGA, M. KANDO, T. KAWAKUBO, KEK; M. UESAKA, T. KOBAYASHI, T. KOZAWA, T. UEDA, University of Tokyo; A. ENDO, K. KOBAYASHI, M. WASHIO, T. HORI, SHI; B. CROS, CNRS; N.E. ANDREEV, V.I. KIRSANOV, IHT - Recently there has been a great progress in laser wakefield accelerators (LWFA) promising a compact high-energy accelerator due to super-high field particle acceleration. In the LWFA ultrahigh gradient accelerating field of the order of 100 GeV/m has been confirmed through recent experiments. A compact terawatt laser system referred to as T<sup>3</sup> (table-top-terawatt) lasers is available for the LWFA as a laser driver providing intense ultrashort laser pulses with a reasonable repetition rate. Our current research is focused on achieving a high energy particle acceleration to energies more than GeV in a table-top scale owing to a channel-guided LWFA scheme by the use of 100 fs, 2 TW T<sup>3</sup> laser system. This paper reports the current status and theoretical expectation of the project. In addition experimental results on laser-plasma interaction will be presented.