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Ignition of a Fusion Flame in DT by Nonlinear Force Driven Plasma Blocks at PW-ps Laser Irradiation HEINRICH HORA, Univ. NSW, Sydney/Australia, GEORGE MILEY, U Illinois, Urbana, IL, J. BADZIAK, IPP & Laser Microfusion, Warsaw, Poland, JIE ZHANG, Inst. Phys., Chinese Acad. Sc., Beijing, China — It seemed to be an impossible task thirty years ago to shine a laser beam on uncompressed solid DT and to ignite a fusion flame because of the necessary energy flux densities are in the range of more than 100MJ/cm^2 or corresponding deuterium ion current densities above 10^{10} Amp/cm^2. Since PW-ps laser pulses are available now, the situation has changed, however, by inclusion of a very sophisticated method for suppressing prepulses such that relativistic self-focusing is avoided and a purely plane or similar geometry interaction as a skin layer process appears. These conditions have been verified by very special experiments in agreement with predicted theory and detailed computations [1]. This leads to the space-charge neutral plasma blocks or pistons generated by the nonlinear (ponderomotive) acceleration for producing the necessary ion current densities for the optimized energies of 80 keV to irradiate DT [2]. [1] J. Badziak, S. Glowacz, S. Jablonski, P. Parys, J. Wolowski, H. Hora, Appl. Phys. Letters **85,** 3041 (2004). [2] H. Hora, Laser and Particle Beams **22,** 439 (2004)

Heinrich Hora
Univ NSW

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