

**Plasma Wakefield Acceleration Experiments Driven  
by Multibunch using UTNL-Twin Linac System,**

T. KOZAWA, T. UEDA, T. KOBAYASHI,  
H. SHIBATA, M. UESAKA, K. MIYA, Univ. Tokyo;  
M. ARINAGA, K. NAKAJIMA, H. NAKANISHI,  
T. KAWAKUBO, A. OGATA, KEK; N. YUGAMI,  
Y. NISHIDA, Utsunomiya Univ.; Y. YOSHIDA,  
Osaka Univ. - Plasma wakefield acceleration is one of  
the methods which are proposed in order to obtain an  
acceleration gradient high enough for the next  
generation of linear colliders. Experiments of plasma  
wakefield acceleration driven by multibunches were  
performed using twin linac system at the University of  
Tokyo. The wakefield accelerator consisted of two  
linacs, achromatic lines, plasma chamber and energy  
analyzer. A 28 MeV linac excited wakefield in Ar  
plasma and a 18 MeV linac witnessed the wakefield.  
The dependence of acceleration characteristics on the  
plasma density was surveyed by observing changes in  
sizes and energy of 18 MeV test bunches.