

Abstract Submitted  
for the DPP11 Meeting of  
The American Physical Society

**Laser Wakefield Accelerators towards table-top accelerators and bright synchrotron sources** M. BLOOM, M.J. STREETER, S. KNEIP, The Blackett Laboratory, Imperial College London, R. BENDROYRO, GoLP/Inst. Plasmas and Fusão Nuclear, Laboratório Associado, Instituto Superior Técnico, Portugal, A. DÖPP, The Blackett Laboratory, Imperial College London, J. HOLLOWAY, University College London, Department of Physics & Astronomy, J. JIANG, N. LOPES, GoLP/Inst. Plasmas and Fusão Nuclear, Laboratório Associado, Instituto Superior Técnico, Portugal, Z. NAJMUDIN, H. NAKAMURA, The Blackett Laboratory, Imperial College London, D. SYMES, Central Laser Facility, STFC Rutherford Appleton Laboratory, S.P.D. MANGLES, The Blackett Laboratory, Imperial College London — Laser wakefield accelerators (LWFA) have the potential to lead a new generation of compact table top accelerators. In particular, they could be an attractive driver for a whole range of light source applications. Recently it has been demonstrated that LWFAs can be a source of very bright x-rays. These x-rays are generated due to the transverse (betatron) oscillations of the electron beam as it is being accelerated. Experiments with 100 TW class lasers have shown the peak brightness of this betatron source to be comparable to 3rd generation light sources (S. Kneip et al, Nature Physics 6, 980-983 (2010)). I will present results from recent experiments on x-ray production using the 250 TW Astra Gemini Laser located at the Rutherford Appleton Laboratory.

Michael Bloom  
Imperial College London

Date submitted: 21 Sep 2011

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