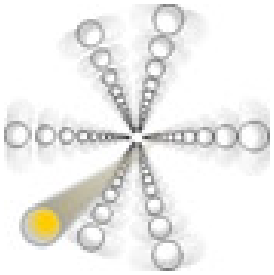

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Radiation and Particle Secondary Sources based on electron Laser Plasma Acceleration

Thursday, 27 September 2012 18:20 (15 minutes)

Ultra-short Ti:Sa laser pulses at relativistic intensities, propagating in plasmas at densities of the order of 1018-19 el/cm3, can induce accelerating electric fields up to 104 times the maximum fields available in the conventional accelerators. The consequent drastic reduction of the dimensions and costs of the apparatus, open to several applications. In fact, once energetic electron bunches at rep rate of a few Hz are produced, X-γ radiation and particle secondary sources can be carried out. Beside their compactness these sources are easily synchronized with other laser systems, fulfilling the best conditions for femtosecond time resolved pump and probe experiments. The talk will concern the experimental chances the 250TW Ti:Sa laser, operating in the INFN Frascati National Laboratories, offers in this very active research field.

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Track Classification: Novel sources: PXR&TR&FEL&Plasma