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**Simulation of x-ray generation by betatron oscillation in a laser-plasma based accelerator** HAE JUNE LEE, SEOK WON HWANG, Pusan National University, SANG YOUNG CHUNG, DONG EON KIM, POSTECH, CHA SU PARK, Dong Eui Institute of Technology — The injection of an ultra-intense femtosecond laser pulse or a strong electron beam into a plasma generates a laser or a plasma wake field which can be used for electron acceleration with a strong acceleration gradient. It was observed that the off-axis injection of the electron beam in a laser or plasma wake field generates betatron oscillation. From the betatron oscillation, X-ray radiation was detected. The two-dimensional simulation results for the betatron oscillation of the electron beam are reported as well as the investigation of radiation properties. Besides, The simulations for femtosecond X-ray generation from Compton back-scattering interaction between electron beam and a laser are presented.

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