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Coherent Radiation Measurements Stations at KEK LUCX Facility

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Recent years have shown the significant progress in the field of application of short and hight brightness THz-frequency pulses. One way to obtain THz radiation pulses is use of coherent radiation generated by femtosecond electron bunches in a compact accelerator. To increase investigation efficiency of various mechanisms for generating EM radiation including stimulated coherent diffraction radiation, Cherenkov radiation, Smith-Purcell radiation, an international collaboration network with leading Universities of Japan and Europe was founded on the base of KEK. As a part of THz program the radiation measurements station was designed and installed at KEK LUCX (Laser Undulator Compton X-ray) facility.

In this report we discuss the detailed design concept and initial test of the radiation measurements station. We present the first results on the measurements of angular distribution and spectrum of a coherent transition radiation.

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