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An experimental proposal for the strong-filed Terahertz generation at SXFEL facility

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Strong field Terahertz (THz) light source has been increasingly important for many scientific frontiers, while it is still a challenge to obtain THz radiation with high pulse energy at wide-tunable frequency. In this paper, we introduce an accelerator-based strong filed THz light source to obtain coherent THz radiation with high pulse energy and tunable frequency and X-ray pulse at the same time, which adopts a frequency beating laser pulse modulated electron beam. Here, we present the experimental preparation for the strong filed THz radiation at shanghai soft X-ray free-electron laser (SXFEL) facility and show its simulated radiation performance.

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