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Preliminary study on THz-TBA based X-ray source

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Two-beam acceleration (TBA) in Terahertz (THz) regime is the natural extension of Gigahertz TBA pursued in Structure Wakefield Acceleration Community. Recently proposed CSR-free shaping technique using deflecting cavities showed the feasibility of generating a high-charge (~1 nC per bunch) bunch train compatible with THz frequency. Wakefield from THz structure with such a high-charge bunch train has potential to reach a few GV/m accelerating gradients or a few GW THz power levels. We present a concept of a compact accelerator using THz-TBA for generating coherent X-ray.

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Footnotes

I have read and accept the Privacy Policy Statement

Yes

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