Contribution ID: **671** Contribution code: **TUPL089** Type: **Poster Presentation**

A novel scheme based on angular dispersion-induced microbunching mechanism for harmonic generation in storage ring

Tuesday, 9 May 2023 16:30 (2 hours)

Angular dispersion-induced microbunching (ADM) scheme was proposed to generate high harmonic coherent radiation in the storage ring with weak energy modulation amplitude. However, it is still difficult to convert the external UV seed laser into the sub-nanometer wavelength. In this paper, we proposed a novel scheme based on ADM mechanism. By properly choosing the parameters, theory and one order simulation demonstrate that it is possible to produce ultrahigh harmonic coherent radiation in the storage ring. The high harmonic conversion efficiency of the proposed scheme may open up a new opportunity to produce sub-nanometer X-ray coherent radiation in the storage ring.

Funding Agency

Footnotes

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Yes

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Session Classification: Tuesday Poster Session

Track Classification: MC2: Photon Sources and Electron Accelerators: MC2.A06: Free Electron Lasers