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Harmonic RF cavity design for 4th Generation Synchrotron Light Sources

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In the radio-frequency system of synchrotron light sources, it is necessary to lengthen the bunches by creating harmonic cavities to improve the beam lifetime. In this paper, we propose three harmonic cavity designs: TM010 mode cavity, TM020 mode cavity, and dual mode cavity, with the Wuhan Advanced Light Source (WALS) as the background. By comparing the beam quality, beam lifetime, and radio-frequency system conditions, a more suitable harmonic cavity system is proposed for the fourth generation synchrotron light source.

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Footnotes

TM010 mode RF cavity, TM020 mode RF cavity, double mode RF cavity, Harmonic RF

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Yes

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