IPAC'24 - 15th International Particle Accelerator Conference



Contribution ID: 1158 Contribution code: MOPC35

Type: Poster Presentation

Design and test of a S band TW buncher for the injector linac of HEPS

Monday, 20 May 2024 16:00 (2 hours)

The bunching system of injector Linac in High Energy Photon Source (HEPS) includes two sub-harmonic bunchers, a pre-buncher and a traveling wave S band buncher. The buncher is a 6-cell constant impedance traveling wave structure operating in $2\pi/3$ mode at 2998.8 MHz. In this paper, the design and test of the traveling wave buncher are presented. First, the characteristic parameters are optimized in CST. Then the buncher is precisely tuned and cold tested with a vector network analyzer after fabrication. Finally, the high power test was finished before installation in Linac. The buncher can operate stably with input power of 10 MW after a week of conditioning. So far the buncher has been applied successfully in Linac of HEPS.

Footnotes

Funding Agency

Paper preparation format

Word

Region represented

Asia

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Session Classification: Monday Poster Session

Track Classification: MC1: Colliders and other Particle and Nuclear and Physics Accelerators: MC1.A08 Linear Accelerators