



Contribution ID: 1120 Contribution code: WEPB103

Type: **Poster Presentation**

A precision clock unit design for kicker power supply on BEPCII-U

Wednesday 4 June 2025 16:00 (2 hours)

The upgrade of Beijing Electron–Positron Collider (BEPCII) is a double-ring machine used for both high-energy physics experiments and synchrotron radiation research. In order to further improve the performance of the machine, BEPCII has upgraded the brightness in the high-energy zone (BEPCII-U). As a key system in BEPCII-U, the fast Kicker pulse power supply system for storage ring injection is crucial. Its performance directly affects the injection efficiency of the machine. In the fast pulse power supply system, the precision clock unit plays an important role in triggering and pulse blocking protection of the fast pulse power supply. The fast pulse power supply requires low output time jitter, which places high demands on the precision clock unit. The designed precision clock unit uses FPGA as the main controller. The system includes a precision clock adjustment section, an output clock distribution section, and a display section. A prototype of a precision clock unit is built. Offline testing and joint debugging between systems were conducted on the prototype and its performance meets the design specifications.

Footnotes

Paper preparation format

Word

Region represented

Asia

Funding Agency

Author: LIU, Peng (Chinese Academy of Sciences)

Co-authors: CHEN, Jinhui (Institute of High Energy Physics); WANG, Guanwen (Institute of High Energy Physics); WANG, Lei (Institute of High Energy Physics)

Presenter: LIU, Peng (Chinese Academy of Sciences)

Session Classification: Wednesday Poster Session

Track Classification: MC7: Accelerator Technology and Sustainability: MC7.T16 Pulsed Power Technology