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Design and implementation of control system for chopper and kicker in HIAF

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As important parts of the High Intensity Heavy Ion Accelerator Facility(HIAF), the Chopper and the Kicker play an indispensable role in controlling the operation mode of the beam and the protection of the machine. Accurate timing control is the key technical requirement and difficulty of this type of equipment, and it has a profound impact on the injection and extraction efficiency and beam quality of HIAF.
According to the physical requirements of HIAF, this paper studies the distributed control technology of Chopper and Kicker systems, and proposes a design scheme of a general hardware platform for timing control of fast pulse devices, which mainly uses White Rabbit high-precision timing, FPGA and optical fiber transmission technology to complete the development of hardware, software and timing system interfaces, and realizes the new design of the core control system and the independent research and development of some core technologies.

Footnotes

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Author: WANG, Pengpeng (Institute of Modern Physics, Chinese Academy of Sciences)

Co-authors: ZHANG, Wei (Institute of Modern Physics, Chinese Academy of Sciences); AN, Shi (Institute of Modern Physics, Chinese Academy of Sciences)

Presenter: WANG, Pengpeng (Institute of Modern Physics, Chinese Academy of Sciences)

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