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## Recent progress and experimental results of electro-optic bunch arrival time monitor for SHINE

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The timing jitter of electron bunch will affect the temporal and power stability of FEL, as well as the resolution of pump-probe experiment at FELs. In order to improve the time stability of electron bunch by beam feed-back, Shanghai high-repetition-rate XFEL and Extreme light facility (SHINE) will employ the Electro-optic Bunch Arrival Time Monitor (EOBAM) to accurately measure the electron bunch arrival time. This paper will introduce design of EOBAM, including the beam pick-up, the electro-optic front-end, the signal detection electronics and the high-level software. Then the latest research progress of the EOBAM for SHINE and the beam experiment for EOBAM prototype based on SXFEL will also be introduced. The experiment results show that the resolution of EOBAM based on the 18 GHz beam pick-up are 5.4 fs@200pC and 8.1fs@100pC.

### Footnotes

### Funding Agency

### I have read and accept the Privacy Policy Statement

Yes

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