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## Recent status of laser synchronization system at SACLA

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The precise synchronization between the optical laser and the FEL is of importance for the ultrafast pump-probe experiments. For this purpose, two techniques have been developed at SACLA. One is arrival timing monitors for the hard and the soft X-ray FEL beamlines, which have  $\sim 4$  fs temporal resolution. The other is a new synchronization system, which consists of a mode-locked oscillator combined with a balanced optical-microwave phase detector (BOM-PD). The typical arrival timing jitter of the new system is  $\sim 40$  fs (RMS). In this presentation, we will report the recent status of the synchronization system at SACLA.

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