

COHERENT SYNCHROTRON RADIATION MONITOR FOR MICROBUNCHING INSTABILITY IN XFEL

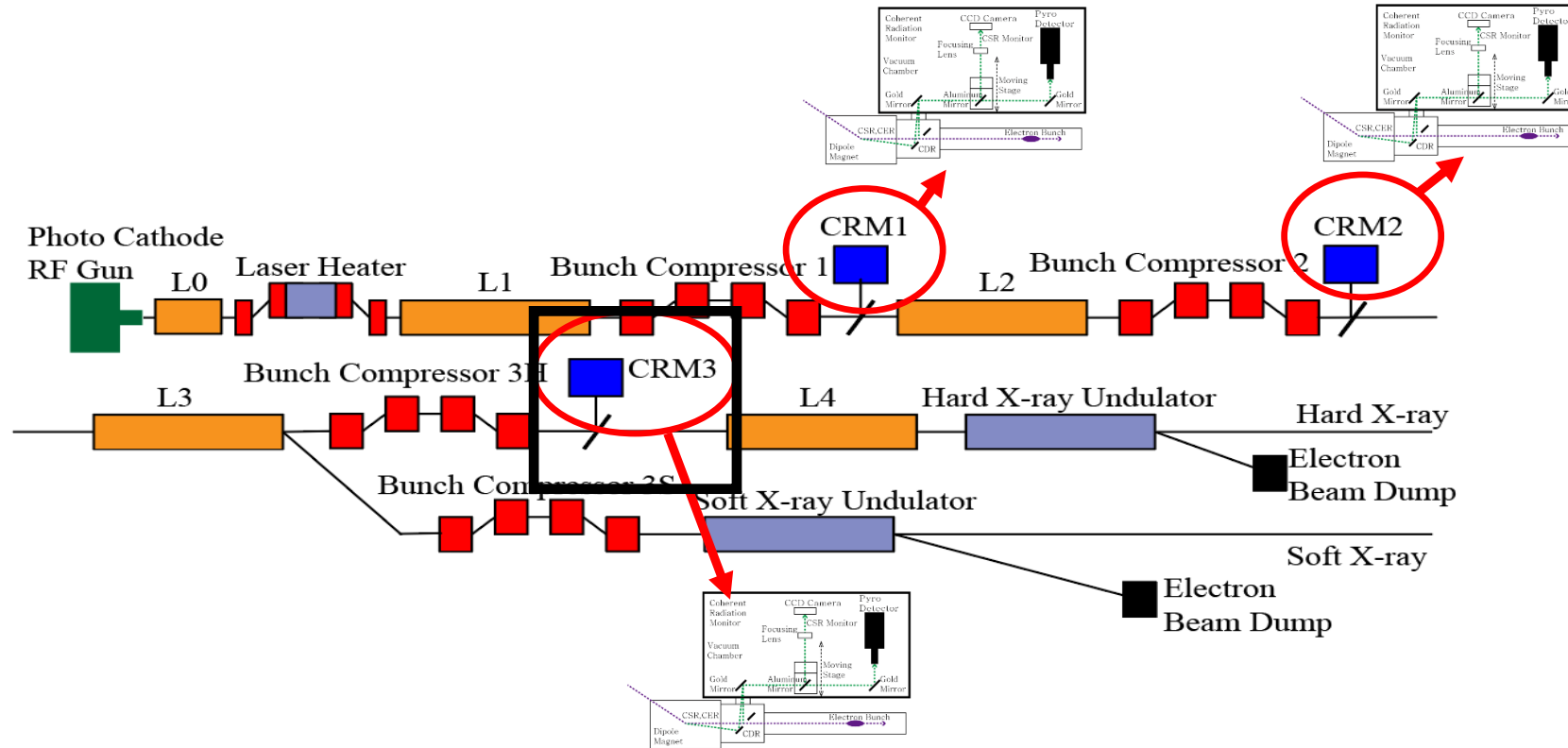
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POSTECH

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Using a laser heater, coherent radiation monitor 3(CRM 3, Pyro-electric detector, CCD camera),

bunch compressor 1 and 2, L1 RF phase : -11, L2 RF phase : -21

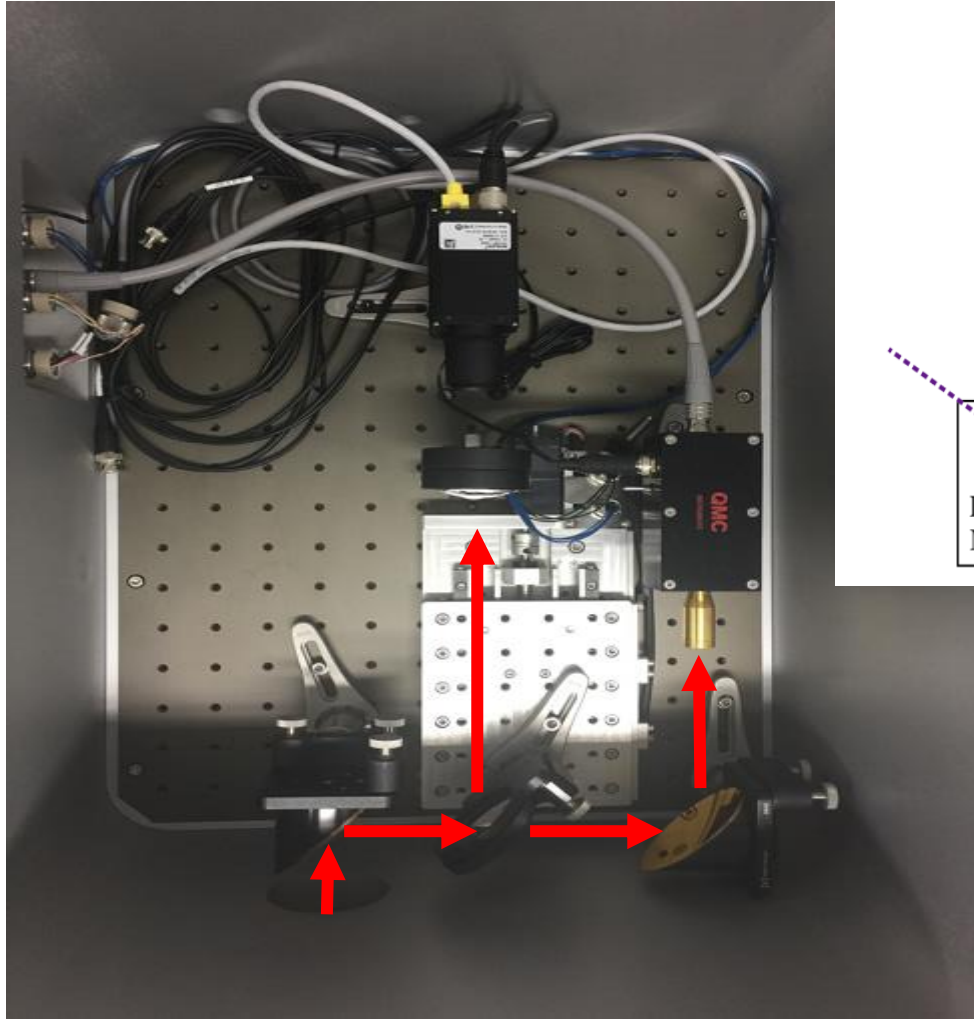


Fig. 1

Pyro-electric detector and CCD camera (CSR monitor) installed in CRM

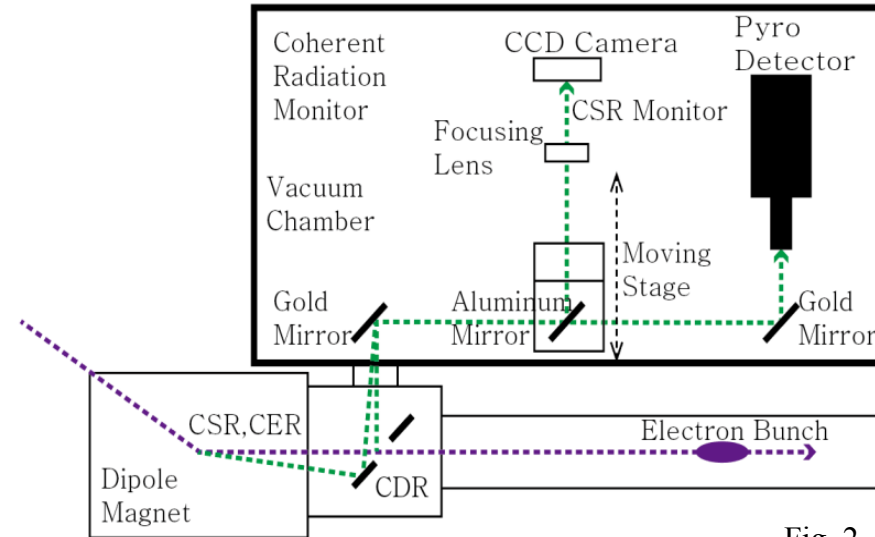


Fig. 2

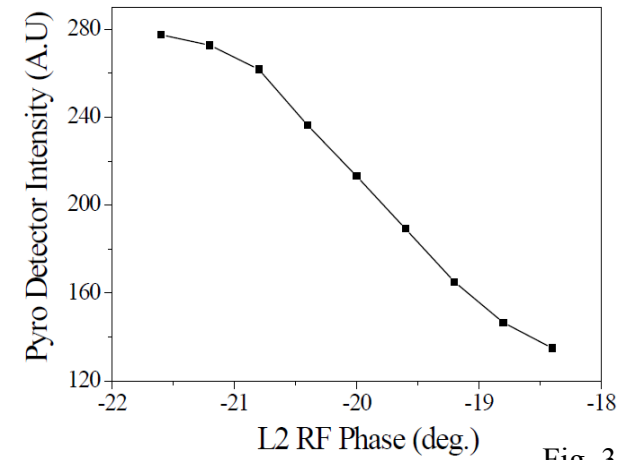


Fig. 3

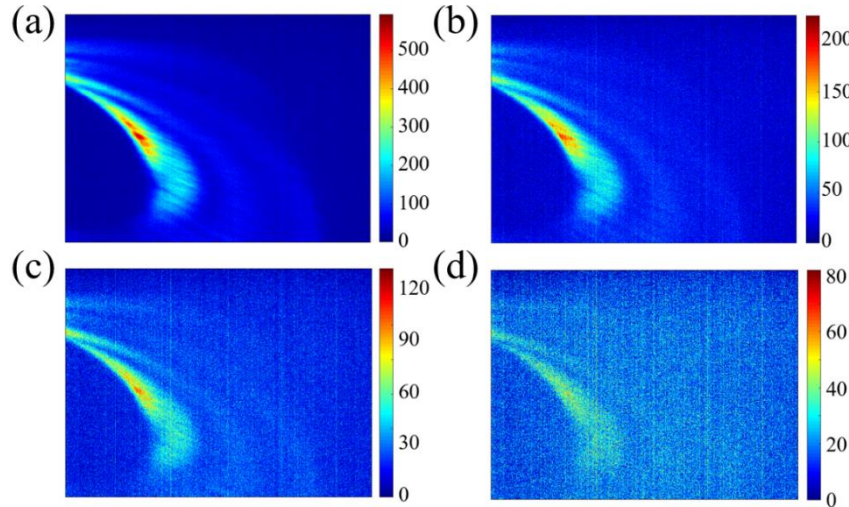


Fig. 4

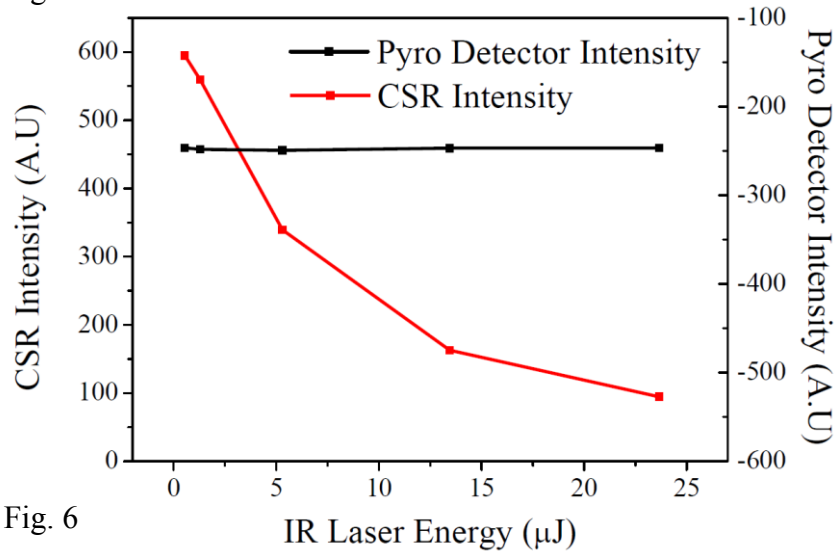


Fig. 6

Laser heater energy :

(a)0.55 μJ, (b)5.3 μJ, (c)13.45 μJ, (d)23.6 μJ

*L2 phase: -21 degree
at BC 3, CRM 3

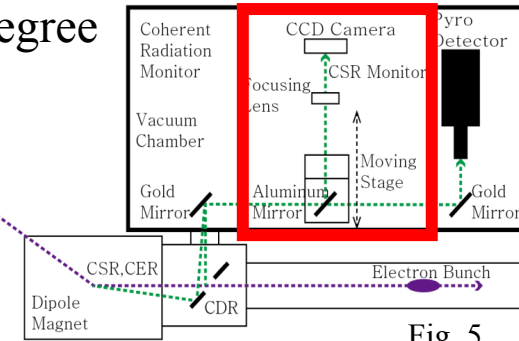


Fig. 5

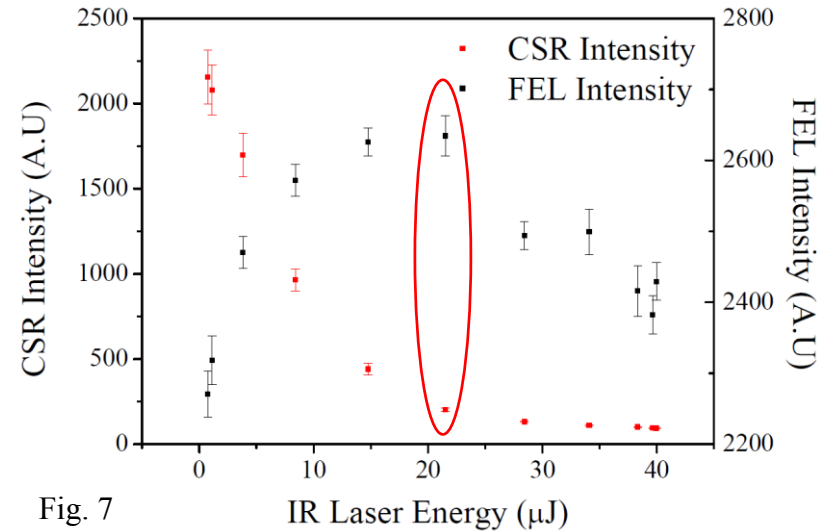


Fig. 7

Coherent Synchrotron Radiation Monitor

- Installed the CSR monitor in the CRM.
- Experiment with a laser heater.
- Compared the results of the pyro-electric detector and CSR monitor.
- The CSR monitor is the MBI measurement tool.

Future plan

- Experiment using BC2, BC3 and soft x-ray part BC3 in PAL-XFEL

Thank You