

● Linac-based CSR (Kyoto Univ., SPring-8, NSLS)

First observation was done at Tohoku Univ. in October, 1987.

This workshop is just 20th anniversary!

- High intensity
- Low repetition rate (~ 100Hz)
- Unstable?

● Storage-ring-based CSR

➤ Low- α and bursting mode (BESSY, New-SUBARU, ANKA, ALS, UVSOR-II)

- High intensity
- High repetition rate (100MHz~1.5GHz)
- Unstable?

➤ Laser bunch slicing (BESSY, ALS, UVSOR-II)

- Relatively low intensity
- Low repetition rate (~kHz)
- Stable

– Induce the bursting mode? (Yes: ALS, BESSY, No: UVSOR-II)

- Narrow-band THz pulse can be produced by modulated laser pulse.

● ERL-based CSR (working at J-Lab., planning at KEK)

- Intense; average ~kW, ($\sim 10\text{W}/\text{cm}^2$), peak ~10GW ($\sim 1\text{MW}/\text{cm}^2$)
- high repetition rate; ~100MHz

Application of CSR

● Probing source

- SNOM, Imaging, ellipsometer (BESSY, ANKA, NSLS,,,,)
- No experiment using the coherence?

● Excitation source

- Ex.) THz excitation + x-ray probe, PES probe (planning at ALS, KEK,,,,)
- Ex.) Magnetization dynamics, etc (NSLS)
- Strong electric field

● Beam diagnosis