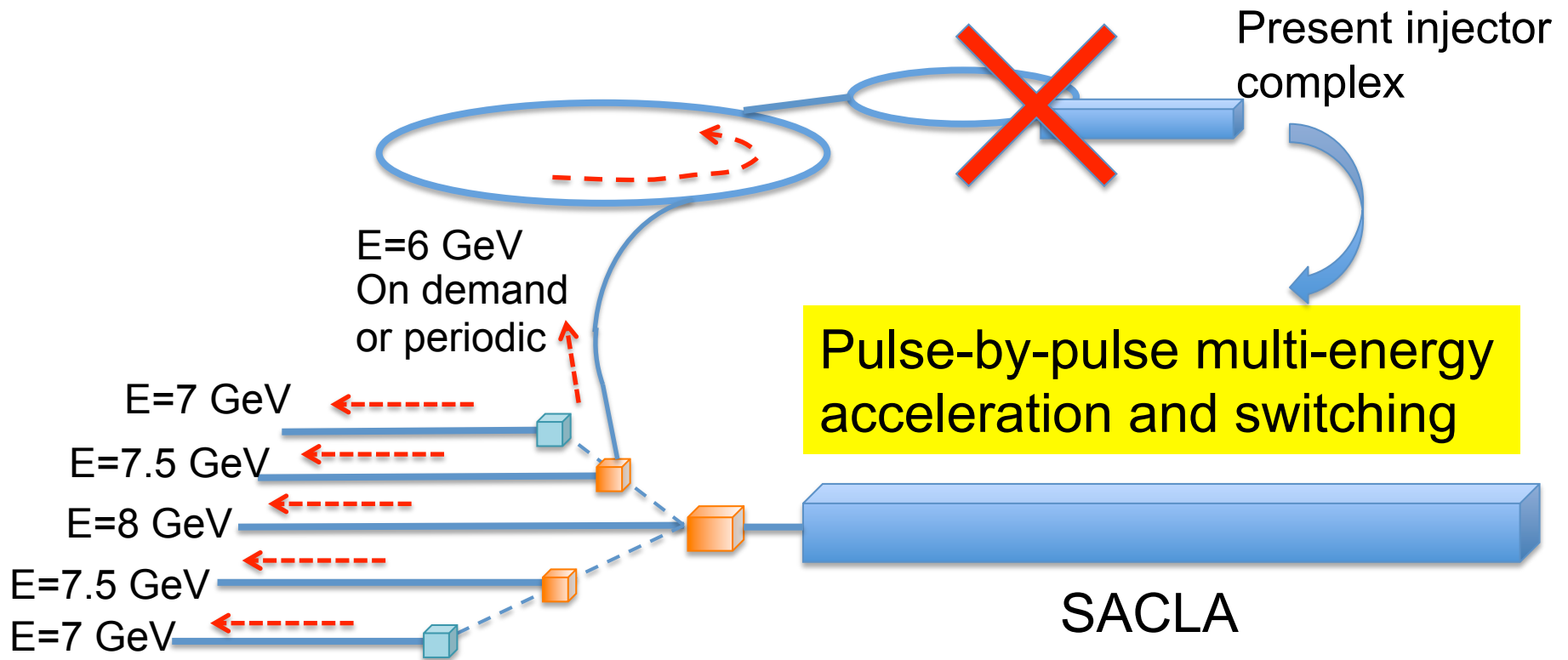


Injector@SPring-8

SACLA linear accelerator will be used both as the upgraded ring injector and XFEL electron driver.



Injector@SPring-8

Pros

- Electric power & running cost saving
- Stable & low emittance beam available
- Extensibility

Cons

- High reliability required for linear accel. operation
- High stability required for linear accel. operation
- Accurate and stable pulse-by-pulse handling

At least, the world's first “**parameter-database applicable**” linear accelerator is necessary for our scheme.

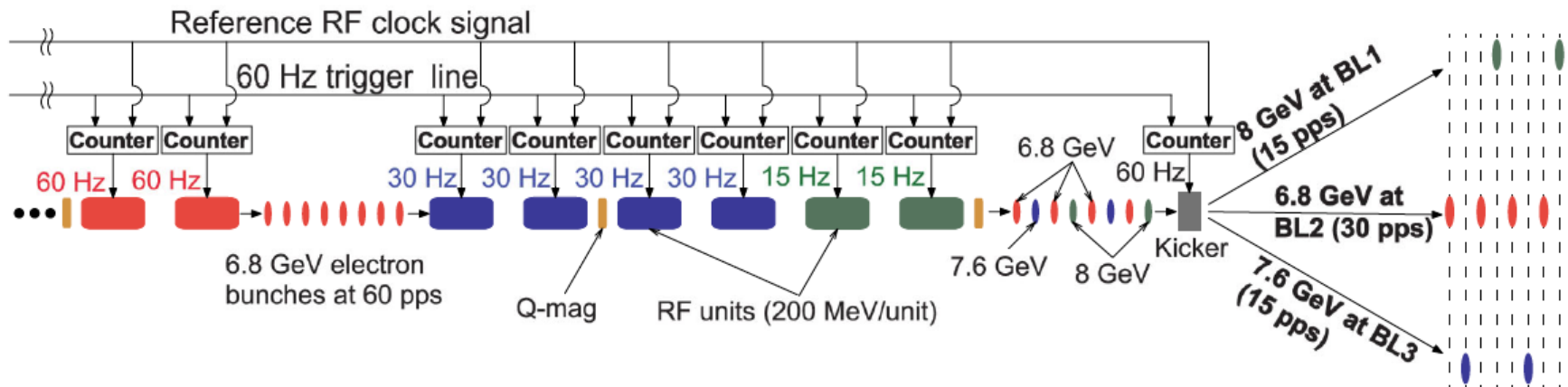
Injector@SPring-8

In 2015, pulse-by-pulse multi-energy beam acceleration and switching for two FEL beamlines (BL2 & BL3) is planned at SACLA and experiments on high quality beam injection from SACLA to SPring-8 is in progress.

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Time-interleaved multienergy acceleration for an x-ray free-electron laser facility

Toru Hara,^{1,*} Kenji Tamasaku,¹ Takao Asaka,¹ Takahiro Inagaki,¹ Yuichi Inubushi,¹ Tetsuo Katayama,² Chikara Kondo,¹ Hirokazu Maesaka,¹ Shinichi Matsubara,² Takashi Ohshima,¹ Yuji Otake,¹ Tatsuyuki Sakurai,¹ Takahiro Sato,^{1,†}



Injector@SPring-8

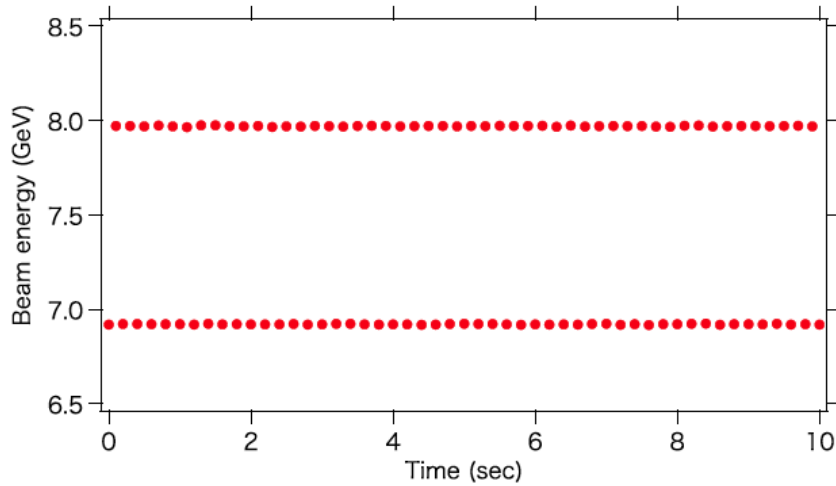


FIG. 3. Beam energies measured at the dispersive chicane of BL3. The bunch repetition was 10 pps and the beam energy was alternately changed between 8.0 and 6.9 GeV.

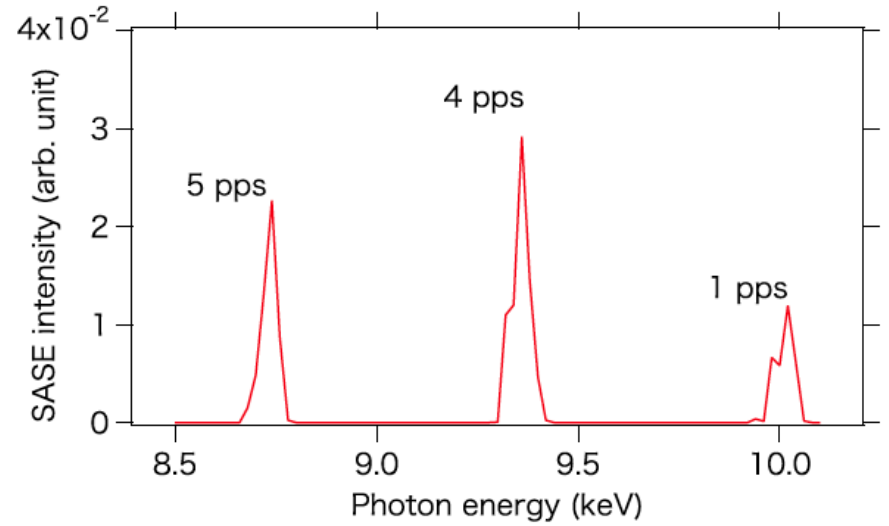


FIG. 6. Spectra of SASE measured by scanning a monochromator. The electron bunch repetition was 10 pps and the beam energy was changed between 7.3, 7.55, and 7.8 GeV.