

Bunch Arrival Monitors

Plans

FLUTE: no optical timing & synchronization system
test REGAE electrical bunch arrival time cavity monitor
—> Joe Frisch, LCLS

Low-charge resolution is limited by RF components (PSI and DESY)
Can this be solved by an RF engineer?

Resolution also limited by electronics (PSI and DESY)

PSI and DESY: Firmware development

Short-Pulse Diagnostics (Spectroscopic Methods)

This workshop: spectrum measurements (no phase information)

Cross-correlation with external source for phase retrieval

—> Thomas Feurer

Grating Spectrometer	Prism Spectrometer	Interferometer
Large bandwidth by combining several gratings	Bandwidth of 1 order of magnitude (single-shot)	Multi-shot / single-shot device
	Extends towards shorter bunches	
Uses pyros (DESY)	Uses MCT detectors (DESY) Uses pyros (SLAC)	
	Easier to cover more than one octave	

Ripples in spectrum: indication of microbunching instability?

Detectors

Are there fast and sensitive detectors for wavelengths between 20 and 100 μm ?

—> cooled detectors (liquid helium) (doped Ge)