



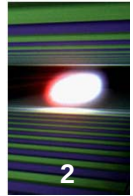
XFEL Std. Diagnostics and FLASH

Systems covered by WP-17

D. Nölle,
DESY, MDI

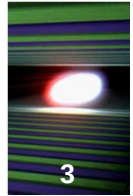


Outline and Scope



- This contribution summarizes the needs of WP-17: Standard Electron Beam Diagnostics
- FLASH I & II and XFEL: MDI intends to make both machines as similar as possible
- High Priorities in 2012 and 2013: Last Chance to test before series production (of electronics)

Different Projects, that will require Beam Time (I)



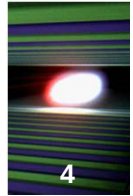
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■ BPM

- Electronics Tests for Button, Reentrant Cavity and Cavity BPM
- Mostly parasitic, but sometimes require Beam Movement and Charge Variation
- Cavity BPMs are planned for the FLASH II Undulator
- Low charge BPM development for FLASH II
(This new electronics shall be used to upgrade the entire facility.)
- Continue R&D on HOM based Systems

■ Toroids and TPS

- Prototype Test of XFEL Toroids
- Partial Replacement of FLASH with XFEL Hardware after this Shutdown
- Mainly parasitic tests using single Monitors
- XFEL Toroids System (except vacuum chamber) shall replace entire old FLASH System



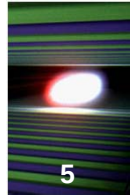
■ Screen Systems

- Test of an XFEL Screen Station in SDump, Combination with LOLA, Resolution & Sensitivity Studies
- Tackle COTR Problem together with WP-18
- Look for Far Future Solutions, e.g. R&D on EUV Screens, PXR
- Need of dedicated beam time, and sometimes access to the vacuum system (change screen material and geometry)
- These are essential tests for FLASH and XFEL
- No beam size measurements without operational screen systems.

■ BLM System and BHM

- Test the BLMs for FLASH II and XFEL
- Tests cover the Monitor as well as the Electronics
- Mainly parasitic Use of FLASH
- XFEL system will also be used for FLASH II, and probably will replace also the old TTF system.

Summary



- MDI foresees to have similar/same systems for XFEL and the FLASH facility
- Therefore all R&D work presented here will improve also the FLASH operation in the future