

Shintake Monitor: Installation and Commissioning Schedule

Taikan SUEHARA,

The University of Tokyo

Topics

1. Overall Schedule
2. Detailed Schedule
 - New Optical Table
 - Fringe Stabilization
 - Laser System
 - Gamma Detector
3. Beam Commissioning
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Overall Schedule

IPBSM Schedule	2007			2008									2009					
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
14 Oct. 2007																		
Basic R&D at Univ. of Tokyo	█			█														
Assembly test at KEK					█													
Installation on ATF2 beam line								█										
Final tuning										█								
Beam commissioning													█					
														█				
Operation																	█	

- Installation on ATF2 beam line: May 2008
- First beam size measurement: end of 2008
- 35 nm measurement: ?? (depends on beam)

Schedule of New Optical Table

- Basic design: **Finished**
- Detailed design (screw position etc.): **by Oct. 2007**
- Basic tests of new components: **by Oct. 2007**
 - Small crossing angle at IP (2 deg.) (**ongoing**)
 - Large crossing angle at fringe monitor
 - Crossing angle switch (**finished**)
 - Off-axis focusing and collimation
- Construction of new table: **by Feb. 2008**
3 to 4 month from design fixed.
- Assembly @ KEK: **Feb. 2008**
- Alignment and assembly test: **Mar. to May 2008**
- Installation on ATF2 beam line: **May to Jun. 2008**

Schedule of Fringe Stabilization

- Concept (magnification by lens): well confirmed
- Stability for low power cw. laser: good (finished)
- Stability for pulsed laser: not good (ongoing)
 - Detector sensitivity check
 - Laser quality check
- Stability for high power laser: not done yet
- Stability goal (0.2 radian = 10 nm or less) for high power laser should be achieved by end of 2007

Schedule of Laser System

- 310 mJ 532 nm laser pulse available
- Laser property is being checked, **by end 2007**
 - Spatial profile is bad ($M^2 \sim 5$), Need tuning
 - Fringe contrast is good enough
- Transport to KEK **in Feb. 2008**
 - Laser hut should be available by Feb. 2008
 - Laser operation should be started by end Feb.
 - Laser tuning by manufacturer
- Transport line construction **by Jun. 2008**

Schedule of Gamma Detector

- Basic design: **finished.**
- Detailed design: **almost finished.**
- PMT check: **ongoing**
- Cosmic ray test: **by end of Oct. 2007**
- Beam test at ATF extraction line: **Nov. to Dec. 2007**
- Modification (if needed)
- Installation: **early 2008**
- Beam commissioning: **Oct. 2008**
(if ATF2 beam available)

Beam Commissioning

- 1~2 months for system commissioning
 - Laser beam alignment
 - Background measurement
 - Software commissioning
- Small crossing angle operation for tuning
 - Available by end of 2008
(if beam will arrive at IP soon after beam on)
- Full operation for 35 nm
 - Schedule depends on beam

Issue

- Final optics tuning and test in ATF2 beam line
 - June 2008 ~
 - To ensure laser safety, people except us should be kept out from IP area
 - Interfere with installation of final doublet??

Summary

- Installation:
 - Optical table: Feb. 2008 (outside shield)
May to Jun. 2008 (beam line)
 - Laser: Feb. 2008 (laser hut)
 - Gamma detector: early 2008
- Commissioning
 - First beam size measurement by end of 2008
(depends on beam condition)

Thank you.

Manpower

- 4 students by March 2008
T. Suehara (D3), H. Yoda (M2),
M. Oroku (M1), T. Yamanaka (M1)
- 2 students will remain after April 2008
Yoda and me will leave
- 6 advisory staffs
Y. Kamiya, S. Komamiya (Univ. of Tokyo)
T. Tauchi, T. Kume, Y. Honda (KEK)
T. Sanuki (Tohoku Univ.)