Laser R&D status

Masao KURIKI (Hiroshima/KEK)

Overview

- 2009/3/26 E. Khazanov, who is in charge of developing the STF laser system, came to KEK to report the status.
- Discussion was made for future prospects.
- PMO(Picosecond master oscillator) based on Yb fiber laser was established, satisfying the basic requirements.
- Minor improvements will be made for remote controlling pulse frequency and locking to RF.

Overview (2)

- Yb LMA(Large Mode Area) PM(Polarized Maintained) + Nd:YLF rod Amplifier is now developing.
- Thermal lens effects are 8.4m/38m, which can be controlled. The full test will be made in August.
- KTP and ADP were selected for SHG and FHG. A test was successfully done with ns pulse. A full test with ps pulse will be made in October.

Discussion

- Accommodation for the laser in STF experimental hall is discussed.
  - **1mx2m optical table.**
  - **Air suspension.**
  - **Laser beam path to cathode should be defined.**
  - **Floor vibration spectrum will be investigated.**
  - **Specification for laser diagnostics should be defined.**

Discussion on Cavity Fabrication

Masao KURIKI (Hiroshima/KEK)

Overview

- A meeting was made with Takatomi (KEK machine shop), to discuss about L-band RF gun cavity fabrication.
- More detail drawings were requested by Takatomi, for further consideration.
- Materials (OFC, SUS, etc.) should be purchased as soon as possible.

Issues

- The cavity design should be refreshed along the following aspects:
  - **Tuning method,**
  - **Pickup Antenna,**
  - **Thermal design,**
  - **Cathode plug and its interface,**
  - **CsTe evaporation chamber.**