

CMS ECAL Laser Control Operation Procedure

By Caltech Group, August 31, 2001

- Activate the laser control program:
 1. Log in to the PC with user name of **laser** and password of **cithep**.
 2. Open a terminal and change the directory to source by typing **cd source**.
 3. Open laser control window by typing **./laser1**
The laser control window showing status of the laser system, including YLF laser, Ti:Sapphire laser and digital delay DG535 etc., will pop up.

- Open the laser setting window: Press (use the left button on the mouse) the **Setting** button in the laser control window, the laser setting window will pop up.

- Change the laser trigger mode:
 1. Press the **DG535 trigger** button on the laser setting window;
 2. Select **Internal** or **External** trigger mode.

- Change the wavelength of the Ti:Sapphire laser:
 1. Press the **Ti:S Laser Wavelength** button on the laser setting window;

2. Select **440 nm** or **500 nm**.
- Change the energy level of the Ti:Sapphire laser output:
 1. Press the **Ti:S Laser Energy** area on the laser setting window;
 2. Type the desired energy level **0 - 99** into the area.
 - On line monitoring:
 1. Press the **Waveform** button on the laser control window, the laser waveform plot will pop up;
 2. Press the **Update** button on the laser control window, the laser waveform plot will be updated by using the latest acquired data from the digital scope;
 3. Select the appropriate time interval by pressing the **All** button, using the mouse for selection and pressing the **Zoom** button in the laser waveform plot, so that the YLF and Ti:Sapphire laser pulses display is appropriate, i.e. contains no unnecessary data.
 4. Press the **Start** button on the laser control window to start data recording into the histogram and history.
 5. Press the **Histogram** or **History** button on the laser control window to display the histogram or history respectively.
 6. Press the **Stop** button on the laser control window to stop data recording. A postscript file **laser.ps** will be created, which contains all plots except the wave form.