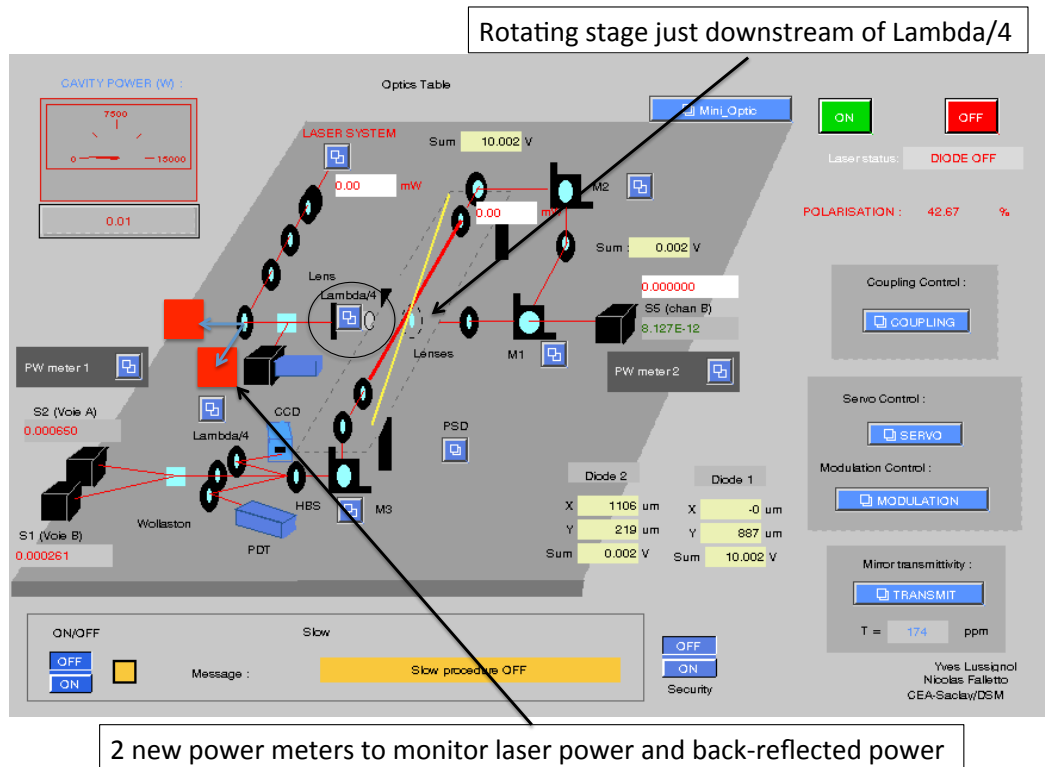


## Compton Laser Tables Controls Modifications: Summer 2015

Overview: I would like to implement a new scheme for setting and monitoring the laser polarization in the Hall A Compton. This scheme mimics the setup we used in Hall C and requires a few new elements on the laser table.



New devices:

1. A rotating stage, identical to the two already in use on the table (QWP1 and QWP2) will be installed just downstream of the first quarter-wave plate. This new rotating stage will hold a half-wave plate instead of a quarter wave plate. The existing rotating stages are connected to the Suruga controller. This controller appears to have 4 total outputs. So, adding this stage will require new EPICS variables and a new control screen, but can use existing drivers/controls routines.
2. 2 power meter heads will also be added to the table. These will be read using a Newport power meter box similar to the two already in use for "PW meter 1" and "PW meter 2". A new serial connection will be required (can re-purpose existing cables), as well as new EPICS variables and control screen.

## Other Controls Jobs:

1. CPUs: About a year ago, we discussed the fact that the CPUs in the Compton slow controls crates are obsolete. Jack Segal has obtained replacement CPUs. I'm not sure if it makes more sense to try to upgrade the CPUs first, or after the changes are made.
2. Thermocouple readout: An SRS mini-crate was formerly used to monitor several thermocouples on the laser table. This crate lives upstairs and I think was read out via serial connection to a VME crate that has since disappeared. I would like to restore this capability if possible.
3. If possible, I would like to update the software for the wave plates such that one could just specify an angle. Right now, one has to specify a number of steps (and direction). This is ok, but when double-checking the configuration of the quarter-wave plates on the table, it's a little tedious to continuously convert steps to degrees.