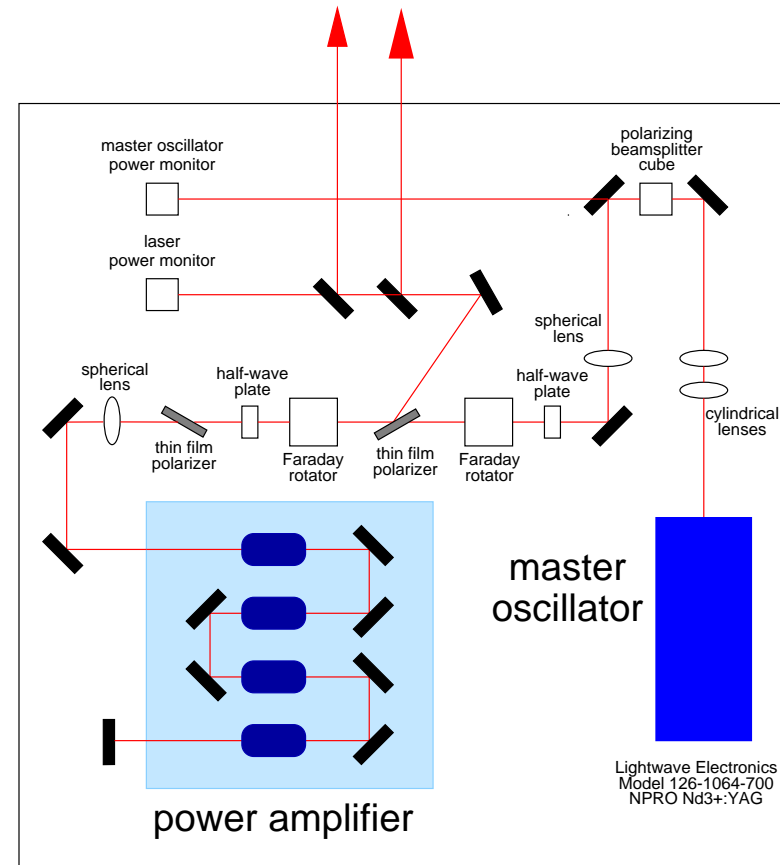

LIGO PSL Status

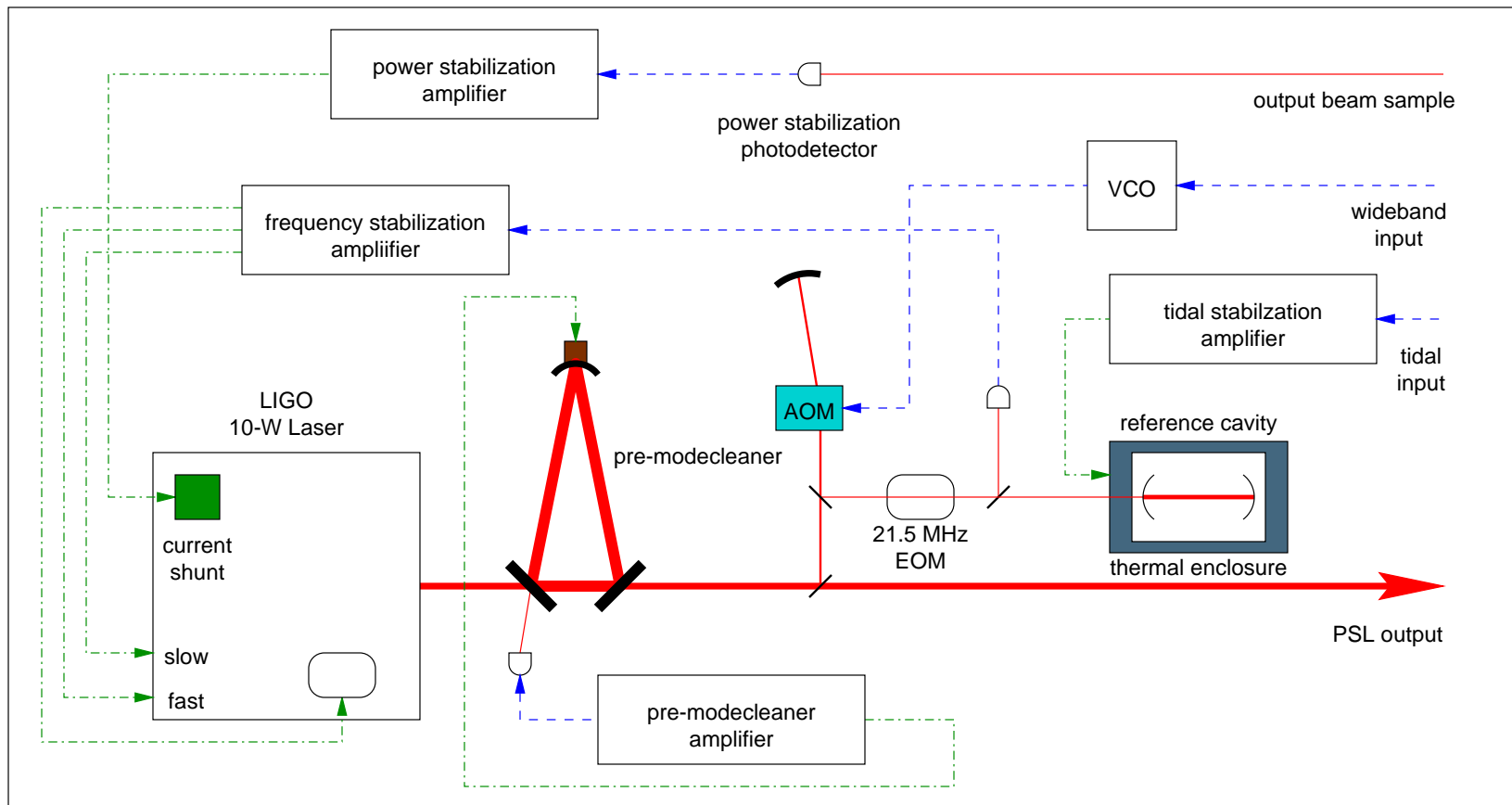
Peter King

LIGO 10-W Laser

- MOPA configuration
- developed under contract with Lightwave Electronics
- 9 lasers with LIGO
 - LHO 2k: ~37k hours
 - LHO 4k: ~27k hours
 - LLO 4k: ~19k hours
 - 40m Lab: ~22k hours



LLO PSL Layout



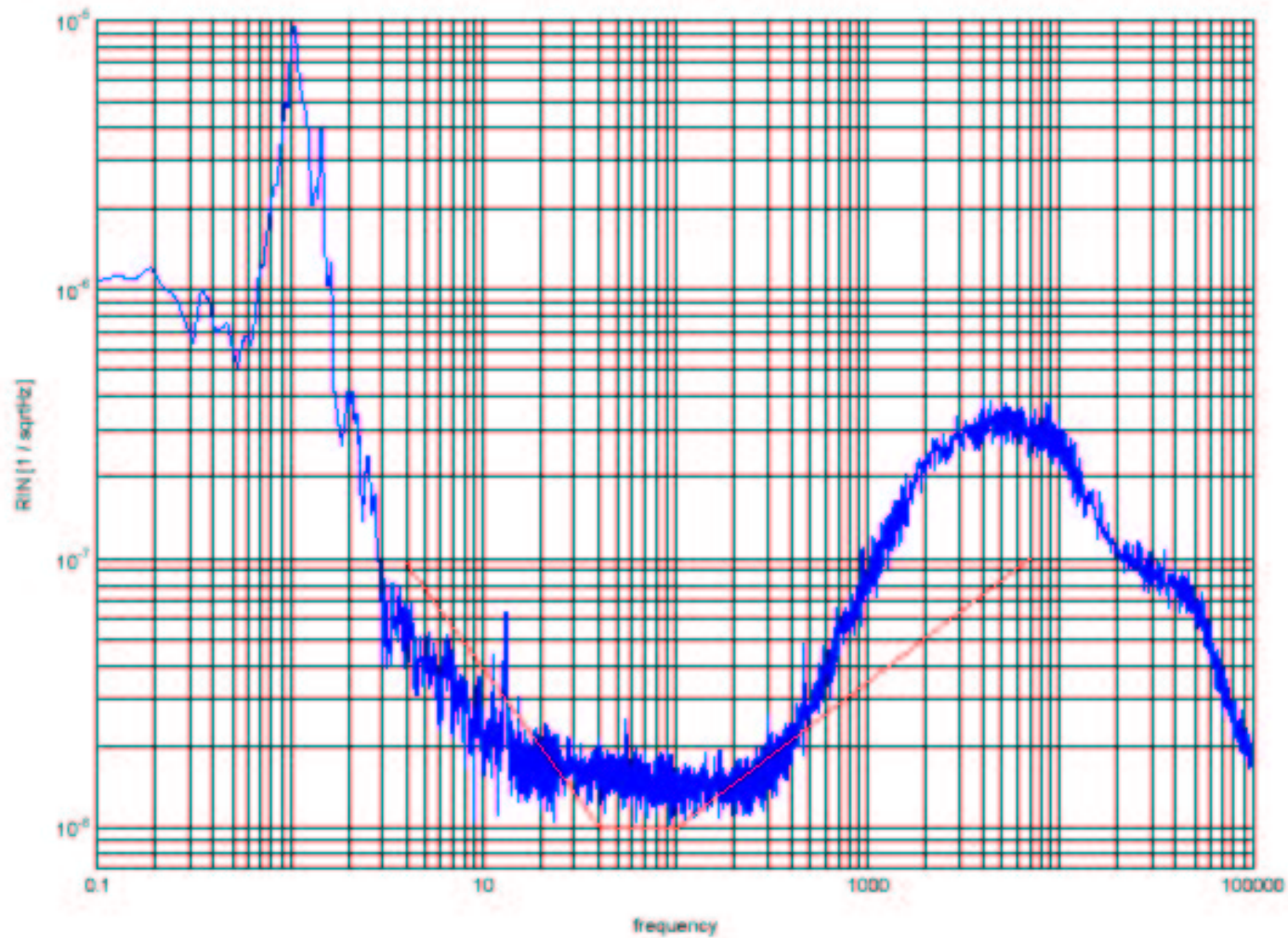
Frequency Stabilisation

- performance close to design requirement
- revisions in progress
 - higher bandwidth servo
 - at present the bandwidth is limited by the full power bandwidth of the PA-85 based Pockels cell driver
 - revised optical layout
 - simplifies switching out 10-W lasers
 - pick-off for reference cavity before pre-modecleaner

Intensity Stabilisation

- performance close to design requirement
 - 2×10^{-8} per Sqrt[Hz] at 10 Hz after the suspended modecleaner
- servo uses two actuators, both modulate the pump diode current
- work underway to improve the bandwidth of the current shunt
 - slew rate limit of OP-37, replaced with AD829
- determine position of sensing photodetector

Intensity Stabilisation



Miscellaneous

- frequency stabilisation developments
(Paul Schwinberg / Rick Savage)
- intensity stabilisation developments
(Mike Zucker / Flavio Nocera)