Current Status of TAMA laser system
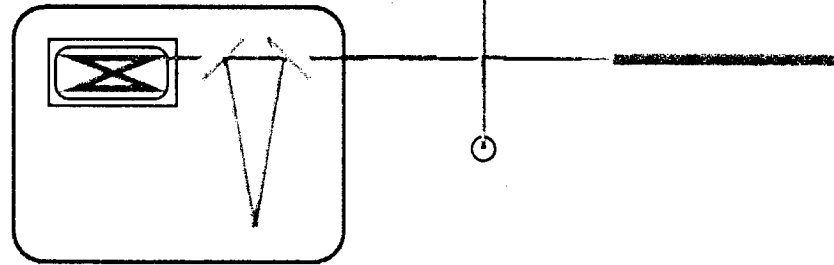
Presented by S. Taniguchi (University of Tok

LSC meeting March 3rd

10W laser + 10m MC

TAMA laser system

function & requirement

- ○ light power : 3W

- ○ Intensity stabilization $\frac{\delta I}{I} \sim 10^{-8}$ /rtHz

- ○ frequency stabilization 5×10^{-7} Hz/rtHz

- ○ modulation (sideband transmission)

○ the TAMA laser system is not combined with the interferometer in terms of servo system yet, optically combined.

○ transmitted power : 3 W

○ Intensity stabilization

$$\frac{\delta I}{I} \sim 10^{-8} \text{ /rtHz (@150 - 450Hz)}$$

when we operate 10 W laser only.

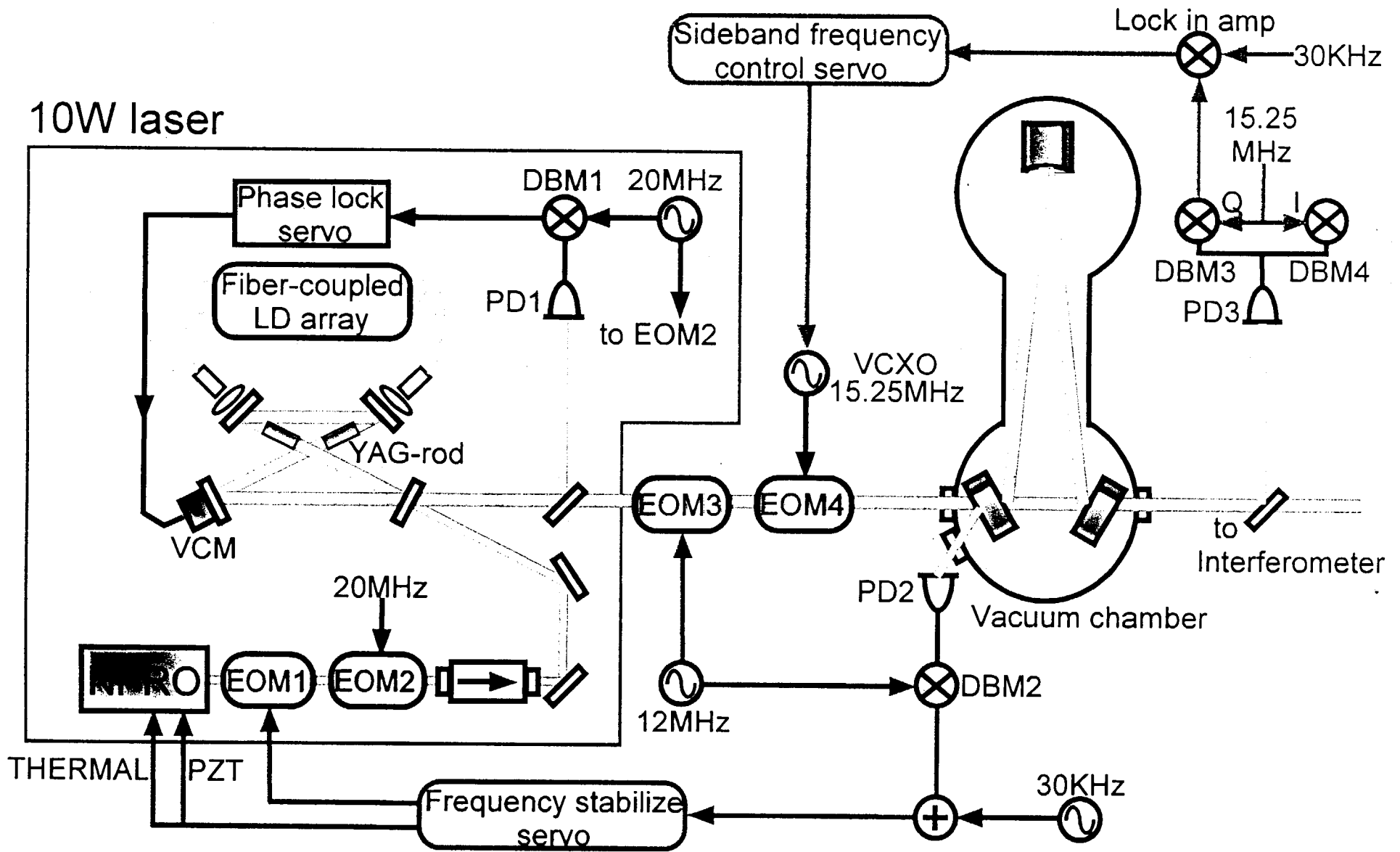○ frequency stabilization $\quad 2 \times 10^{-4}\text{Hz/rtHz}$

○ excess noise after MC

master laser only — shot noise limited (30mW)

10 W laser — still investigating

Current Configuration of Laser & MC

Configuration for frequency stabilization