

# Hanford 2k interferometer

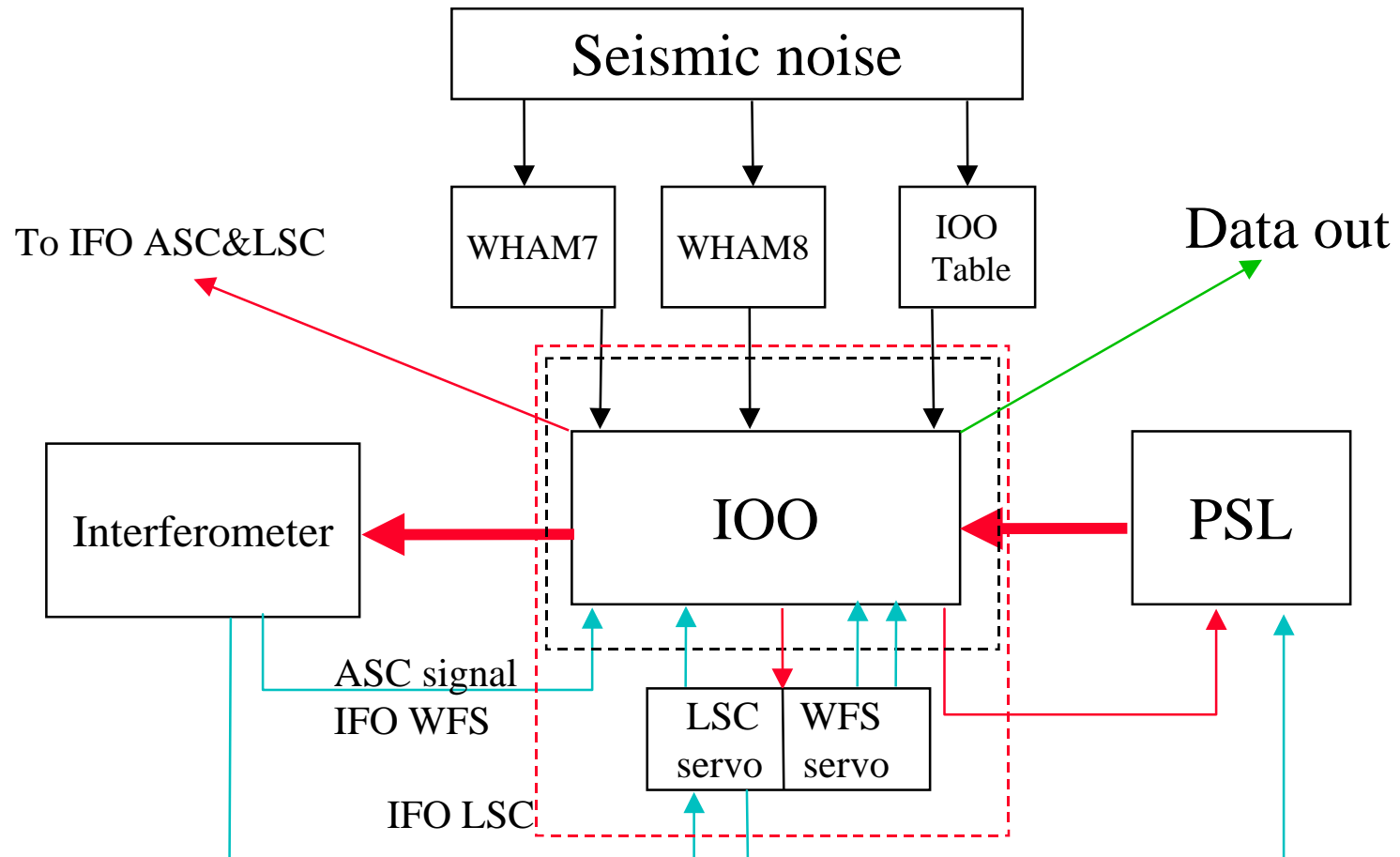
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## Input Optics Architecture

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# IOO Integration



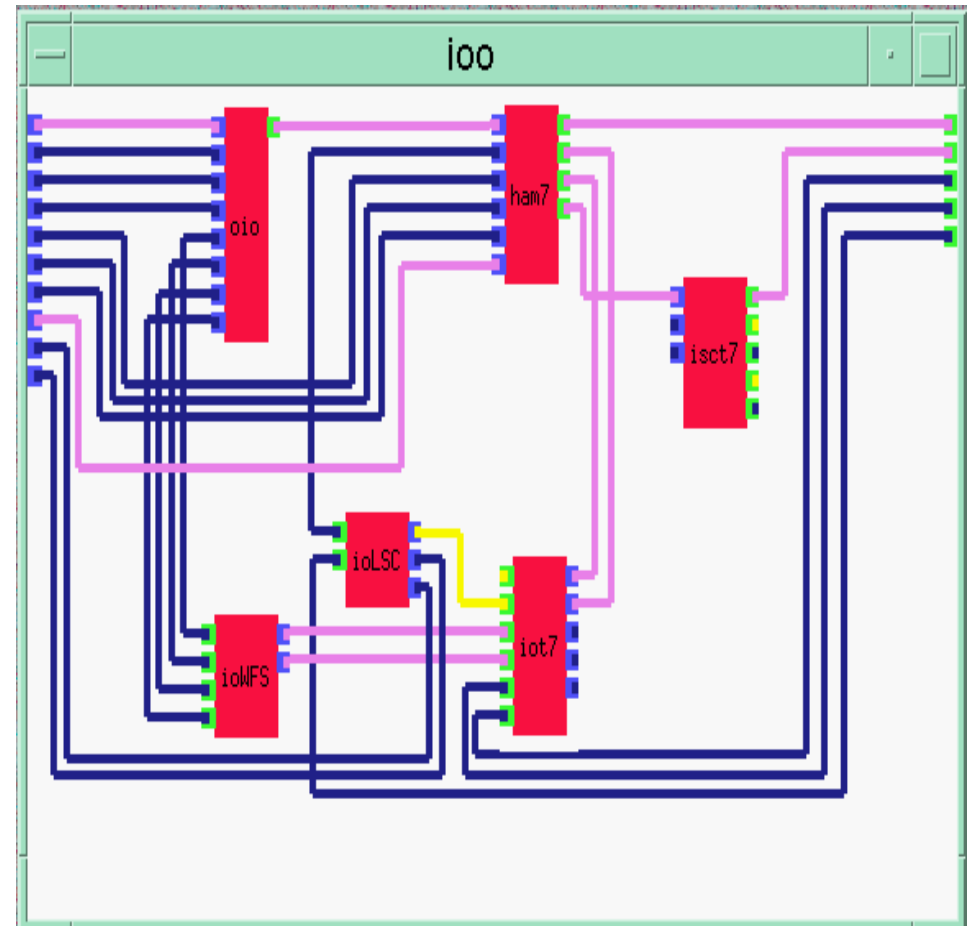
# ioo.box

- Input signals

- psl\_beam (field) - input field
- k1 (real) - EOM-1 mod. frequency
- k2 (real) - EOM-2 mod. frequency
- k3 (real) - EOM-3 mod. Frequency
- Add\_Off (real) - additive offset
- VME (real) - VME control
- MMT3\_yaw (real)
- MMT3\_pitch (real)

- Output signals

- io\_beam (field) - output field
- ifo\_rl (field) - ifo reflected light (FI)
- psl\_iss (real) - psl intensity stabilization
- MC\_noise (real) - MC noise monitor
- WBS (real) - wideband servo



# ioo.out.box

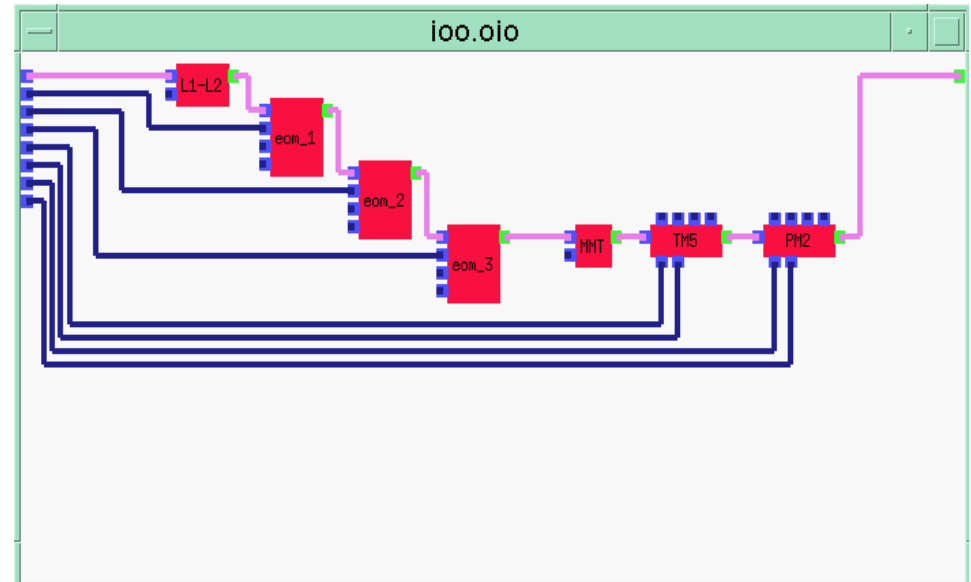
- Input signals

- in (field) - input field
- k1 (real) - EOM-1 mod. frequency
- k2 (real) - EOM-2 mod. frequency
- k3 (real) - EOM-3 mod. Frequency
- TM5\_yaw (real)
- TM5\_pitch (real)
- PM2\_yaw (real)
- PM2\_pitch (real)

- Output signals

- out (field) - output field

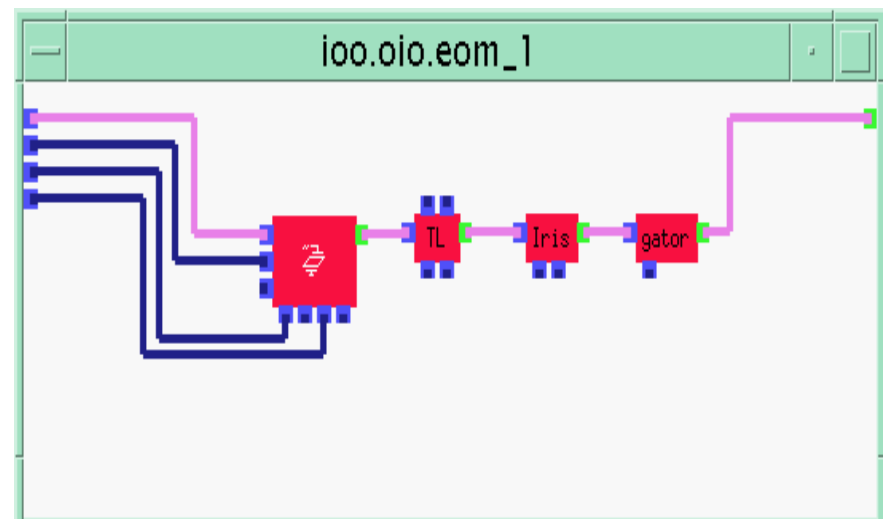
June 2, 1999, S.Klimenko



- MMT - now use the periscope module. Using thin lens module we could describe static misalignment of the MMT lenses that makes beam elliptic.

# ioo.out.eom.box

- Input signals
  - in (field) - input field
  - k (real) - modulation frequency
  - gamma (real) - frequency mod. depth
  - gA (real) - amplitude mod. depth
- Output signals
  - out (field) - output field
- EOM - side-band generator
- TL - thick thermo-lens
- Iris - EOM aperture



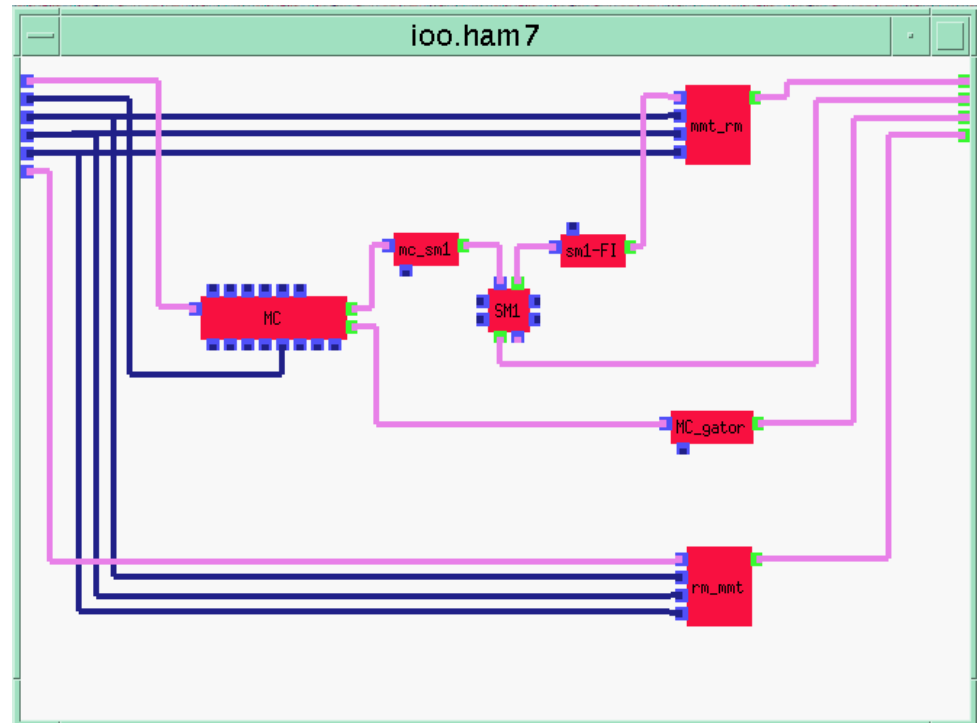
# ioo.ham7.box

- Input signals

- in (field) - input field
- ifo-ref (field) - IFO reflected light
- MCVM\_LS (real) - MC vertex mirror length servo
- MMT3\_yaw (real)
- MMT3\_pitch (real)
- MMT3\_LS (real) - length servo

- Output signals

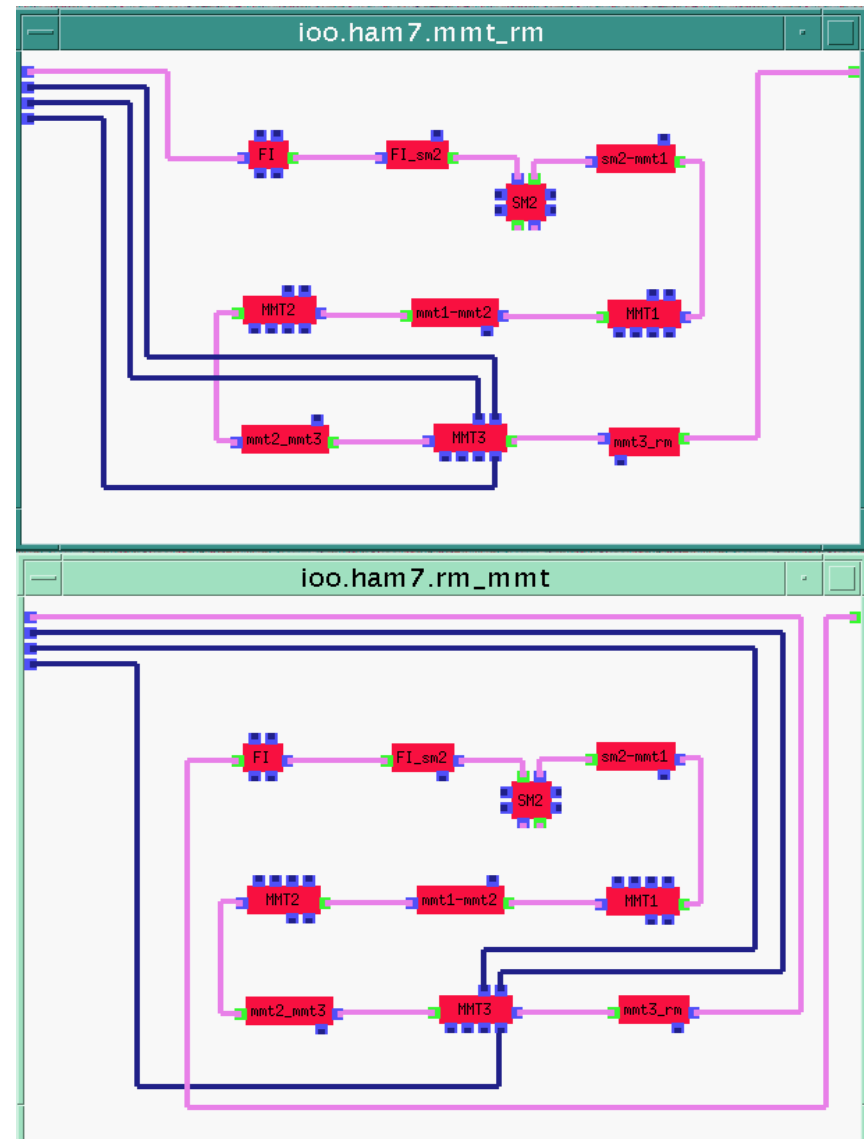
- out (field) - output field
- MC\_out (field) - MC field
- MC\_ref (field) - MC reflected light
- FI\_ref (field) - FI reflected light



- **mmt\_rm** - ioo beam path
- **rm\_mmt** - ifo reflected beam path

# ioo.ham7.mmt\_rm.box

- Input signals
  - in (field) - input field
  - `mmt_rm` - in = main beam
  - `rm_mmt` - in = ifo\_ref beam
  - MMT3\_yaw (real)
  - MMT3\_pitch (real)
  - MMT3\_LS (real) - length servo
- Output signals
  - out (field) - output field
- Faraday Isolator (FI) is represented by thick thermo-lens (should be a lens with 2 input, 2 output beams)



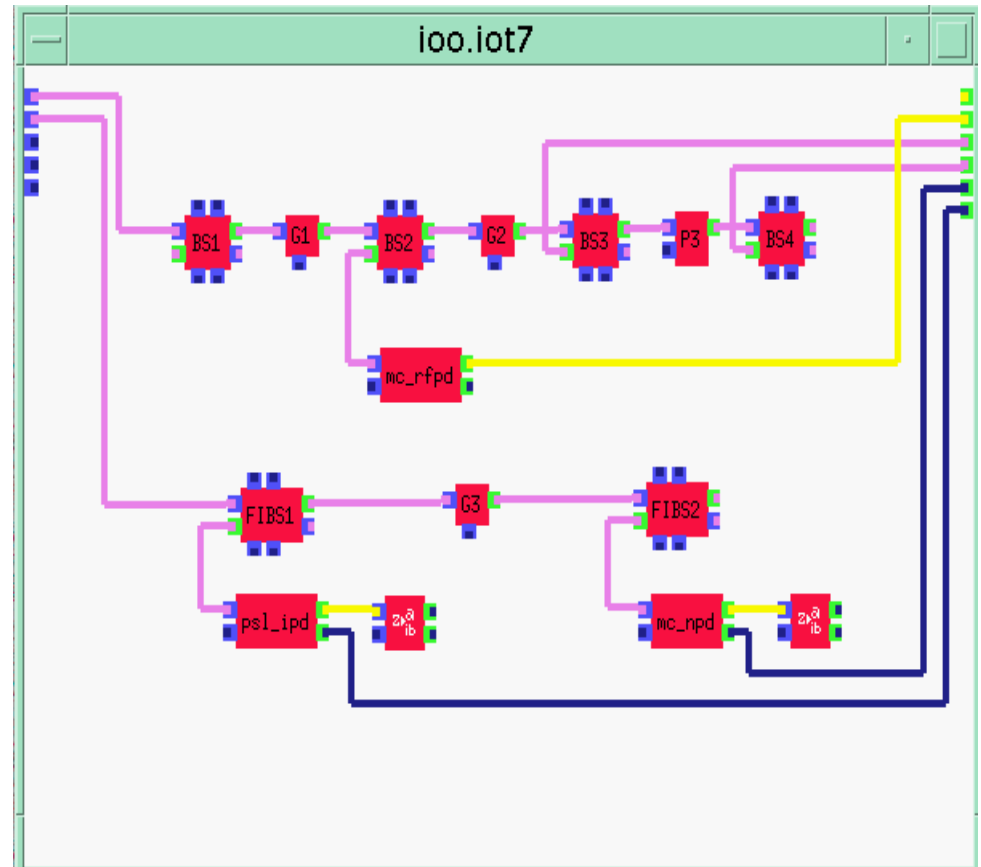
# ioo.iot7.box

- Input signals

- MCRL (field) - MC reflected light
- MCTL (field) - MC transm. light
- k1 (real) - pd demod. frequency
- k2 (real) - pd demod. Frequency
- k3 (real) - pd demod. frequency

- Output signals

- Qpd (complex)
- MC\_rfpd (complex)
- Apd1 (field)
- Apd2 (field)
- PSL\_Ipd (real)
- MC\_Npd (real)



## Plans for June, 1999

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- IO box files corrections
- parameters & settings
- migration of IO modules into e2e
  - migration procedure
  - update modules (new field class?)
- meeting in Hanford in the End of June
  - PSL & IO integration (July)
  - shakedown, test simulation (July)