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# Director's Review: Introduction and Concluding Remarks

Director's Review

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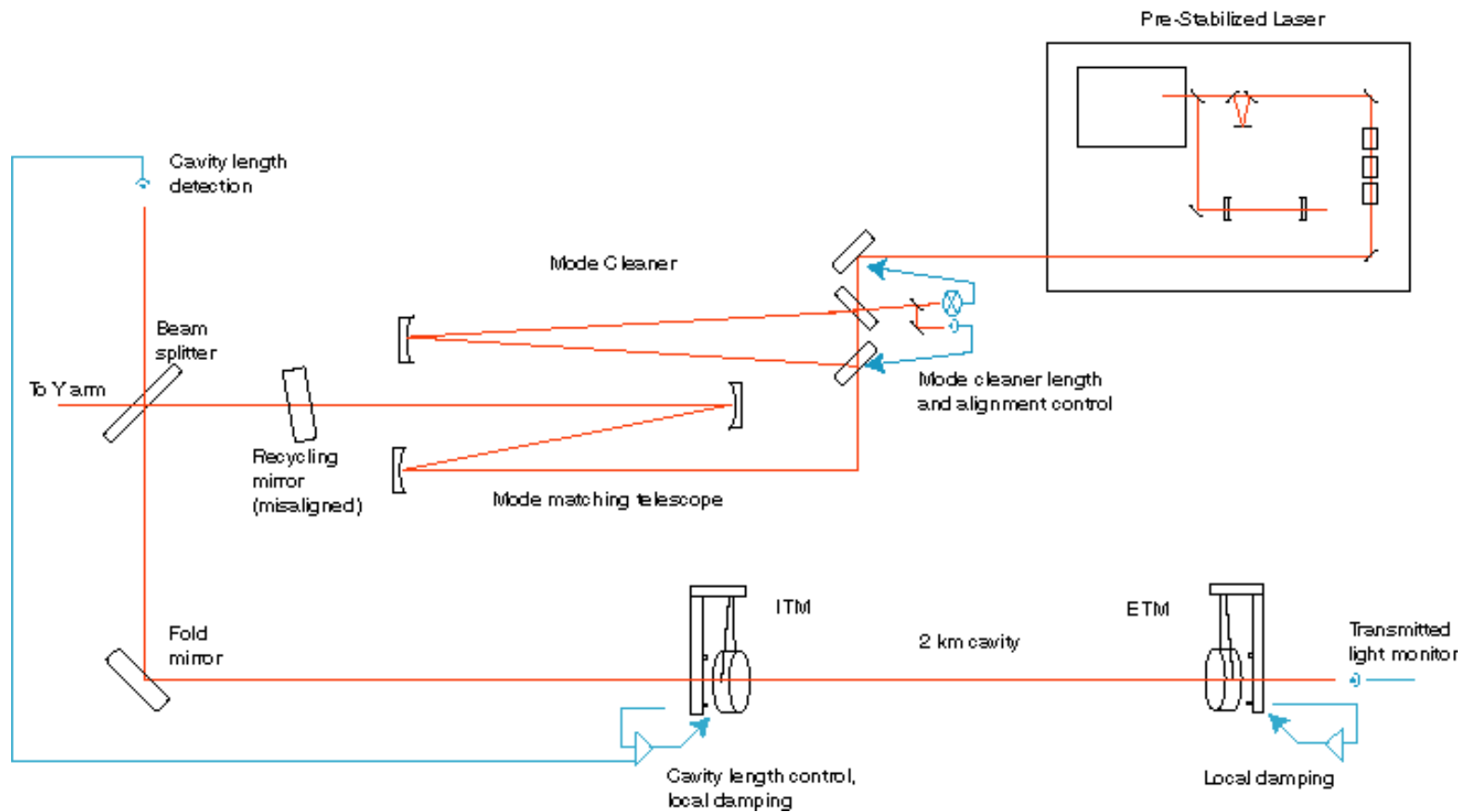
# Director's Review

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- Purpose of Director's Review
  - ›› Replace the construction phase design reviews
  - ›› “assess the progress of specific efforts in some detail”
  - ›› “reached a point where there is real progress and issues to discuss”
- Why this one is a little different than “most”
  - ›› Single arm test ended April 17th, so analysis of data is somewhat less mature than usual
  - ›› Speakers will be presenting work of many people, including some investigations that they may not have been involved with



# Single Arm Test Configuration





# Single Arm Test Goals

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- Verify initial alignment
- Servos
  - ›› Length-alignment couplings
  - ›› (Test final common mode servo configuration)
- Environmental
  - ›› Verify models of earth tides and microseismic motion
  - ›› Measure angular motions of optics (models poor compared to displacement)
- Suspensions
  - ›› Develop suspension tuning procedure
  - ›› Q's of test masses



# Single Arm Test Goals (continued)

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- Optics
  - ›› Modematching
  - ›› Cavity losses
- Commission control room
  - ›› Data acquisition and interferometer control
  - ›› Diagnostic tools
- Educate staff



# Water Load into Beamtube

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- Fluorel spring seats in seismic isolation stack were found to be a larger-than-expected source of water
- Transmission of water vapor through the LN2 cryotrap threatened to undo the benefits of the beamtube bake
- Established budget 400 t-l per beamtube module (2 km)
  - ›› Pressure will still meet Science Requirement Document spec
- Single arm test program (4 months) deposited
  - ›› ~50 t-l on Y arm
  - ›› ~25 t-l on X arm
- Outgassing rates coming down more or less as expected



# Summary

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- **Very successful**
  - ›› Essentially all goals met (still analyzing data in some cases)
- **Engineering run (“E1”)**
  - ›› “24” hours of data (all relevant channels archived for further analysis)
  - ›› Available to Lab and LSC personnel via simplified access request
- **A number of improvements and reworks underway**
  - ›› Correct minor problem with initial alignment survey
  - ›› ...
  - ›› New design for suspension control electronics