End to End Model update

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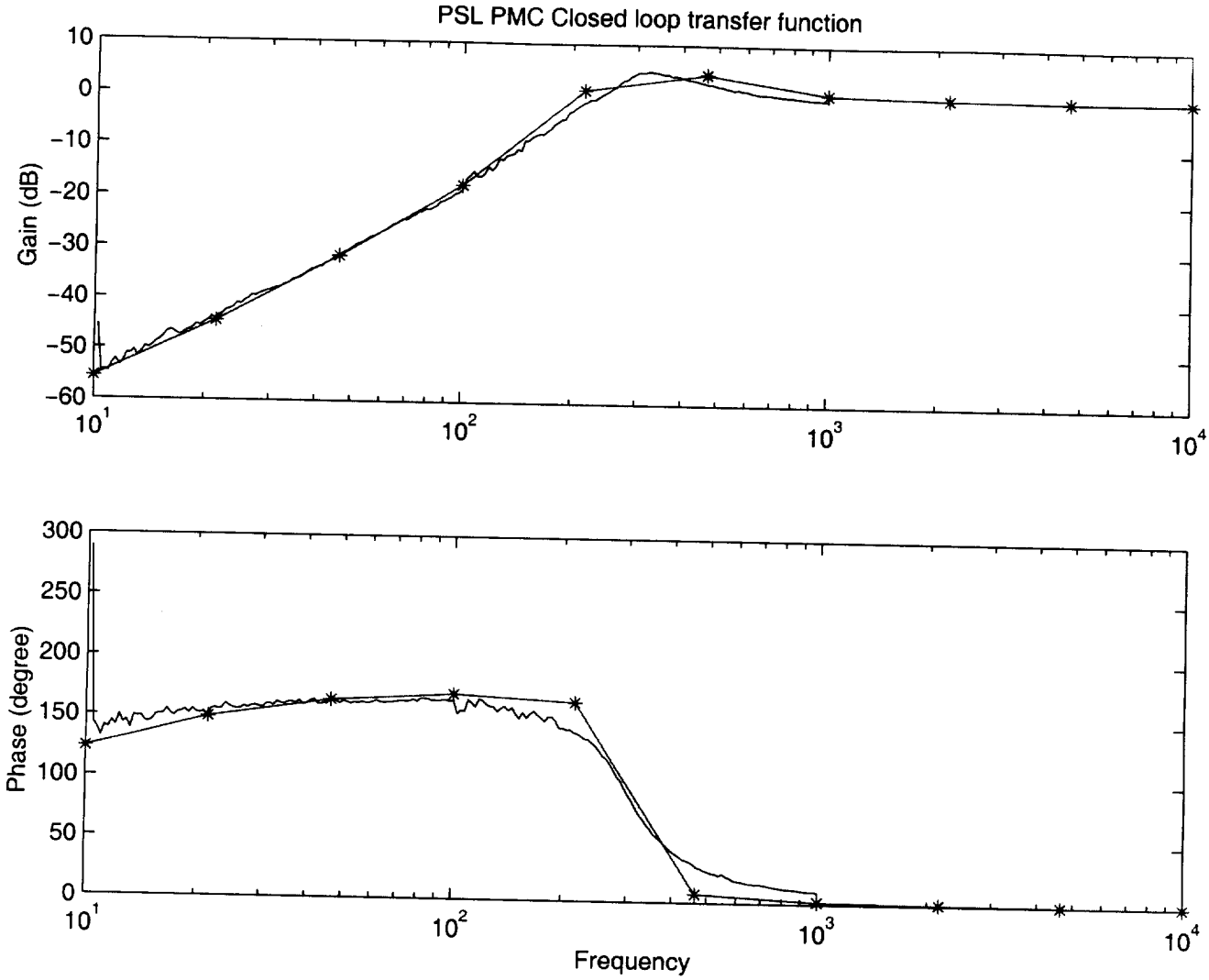
LSC Meeting at Stanford on July 20, 1999

- LIGO Simulation development status
- Code development
- Mechanical Simulation Engine by G.Cella
- Future path

PMC transfer function
data vs model



MSE by G.Cella
Mechanical Simulation Engine

- C++ class to simulate mechanical structure in a modular way
- Building blocks
  - Wire, Spring, Beam, RigidBody
  - PositionActuator, ForceActuator
  - PositionSensor, ForceSensor
  - Frame, Clamp
- Simulation
  - Add elements
  - Define constraints
  - Add sensors
  - Find equilibrium (working) point
  - Run in time domain or frequency domain

Future path
goals and priorities

- Detector Diagnostics
  - Build all subsystems which have base minimum functionality
  - Catch up with the hardware development
    - model validation stage to diagnostic/design tool
  - Improve granularity of subsystems
  - Tools and interface for the use at the site
  - Thermal lensing effect
  - Improve optics simulation - FFT?
- Data Analysis aid by pseudo data production
  - Interface to the GW source input
  - Interface to produce Frame format data
  - All necessary noise sources
  - Speed up of in-clock state simulation
- Future R&D
  - Completion of MSE with GUI
  - Speed up of simulation - parallelization ?
- Others
  - Data visualization
  - Documentation

Note 1, Linda Turner, 08/17/99 08:51:45 PM
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