

Suspension/Isolation Working Group

David Shoemaker - LSC - 19 Jul 99

Activities since last LSC meeting

- Design Summit, MIT 13-16 May
- Extensive documentation of designs
- Innumerable teleconferences



Design Summit

Requirements

- point of departure: thermal noise to dominate Interferometer noise
- point of conclusion: quantum noise to dominate

Suspension/thermal noise

- GEO design with modifications for lower frequency operation
- fused-silica ribbons characterized, promise very small suspension thermal noise
- Big Question: can the potential low thermal noise of Sapphire be realized?

Isolation systems

- choose 10 Hz intersection with (Ribbon) suspension thermal noise
 - radiation pressure dominates; Newtonian Background nearby
- two viable design paths: passive and active attenuation of low frequencies
- passive elements close to test mass in any event

Adoption of standards to help compare designs

- Suspension transfer functions, nominal closed loop controller, performance requirements
- Technical Readiness Levels, risk assessment



At this meeting

Monday Afternoon

- review of design status, inform and interact with LSC members not active in SWG

Tuesday Afternoon, Wednesday Morning

- establish reference design recommendation

Wednesday Afternoon

- coordination of R&D plans

At the conclusion of the meeting, the Working Group chairs must have all input to come from the LSC at large on:

- A reference design recommendation
- Detailed plan for R&D to support development of design
 - milestones
 - deliverables
 - costs



Note 1, Linda Turner, 08/17/99 07:29:44 PM
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