

Suspensions/Isolation Working Group

LSC 11 March 98
David Shoemaker

January '97 Aspen workshop: Formation of Ad-Hoc Working Group

- notes on LIGO, JILA Web Sites

Subsequent and future gatherings:

- Spring APS, 1997
- LSC Livingston, August 97
- Thermal Noise Weekend, Stanford November 97
- This meeting: LSC Hanford, March 98
- Perugia: Thermal Noise and low-frequency noise sources, 4-6 June 98
- LSC JILA, August (11-12 August: workshop on isolation issues)

Common activities focussed around LIGO interferometer evolution

- '2003' LIGO II advanced subsystems
 - > double pendulum explicit path
 - > moderate improvements in Q
 - > associated control changes (e.g., external active system)
- '2007' LIGO III advanced LIGO
 - > large masses, high Qs, low F seismic isolation
 - > too early for conceptual designs
 - > 'what is crossover frequency with gravity gradient limit?'

Meeting Goals

Exchange of technical advances

- ACIGA preisolation and sapphire test mass and suspension (JU Li)
- multi-stage passive designs for LIGO (Riccardo Desalvo)
- brief overview of recent design progress for the GEO suspension:
 - advances in silicate bonding of the lowest stage (Sheila Rowan)
 - earlier parts of the suspension (Ken Strain/Jim Hough)
- subsystem dynamic model compatibility (Joe Giaime)
- ideas for models of suspensions in interferometer (Gabriela Gonzalez)
- cryogenic suspensions (Warren Johnson)
- roadmap for Advanced Seismic Isolation (Tuck Stebbins)
- progress report on magnetic suspension work (Ron Drever)
- progress on measurement of anelasticity and on calculation on coating losses; setting goals for performance improvements (Peter Saulson)
- active isolation: near term plans in LIGO (David Shoemaker)

Development of a shared 'timeline'

- > linked schedules, joint activities
- > division of effort
- > ultimately, a combined cost, schedule, and technical plan

Development of a decision-making process

- > not all paths can be followed (people, money, time)
- > choices needed: need to say 'no' to some activities
- > how to do this?

Note 1, Linda Turner, 04/20/98 03:27:15 PM
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