

**Attachment SUS to the
Memorandum of Understanding (LIGO-M050375-00-M)
between the
Caltech Experimental Gravitational-Physics Group (CEGG)
and the
Laser Interferometer Gravitational Wave Observatory (LIGO)
August 15, 2005**

This Attachment SUS to the Memorandum of Understanding LIGO-M970114-00-M defines the role of the Caltech Experimental Gravitational-Physics Group (CEGG) as a Member of the LIGO Scientific Collaboration (LSC) and a member of the Isolation/Suspension/Thermal Noise Development Group (ISTNDG). The period of performance for the activities in this Attachment is from August 15, 2005 to August 15, 2006.

1. Isolation/Suspension/Thermal Noise Development Group - The Isolation/Suspension/Thermal Noise Development Group (ISTNDG) is the scientific collaboration for defining and developing future isolation and suspension improvements for use in advanced subsystems for the initial LIGO interferometers or in entirely new advanced interferometers. MOU Attachments define the roles and responsibilities of groups in this development group.
2. During the period August 15, 2005 to August 15, 2006, the members of CEGG Group will participate in ISTNDG in the following areas:
 - a) Work continues in replacing the old laser system in the 40 m test interferometer. It has been replaced by a new, more powerful, commercial frequency doubled Nd:Yag laser. We are in process of completing this installation and modifying the control system to effectively stabilize the frequency of the new laser system to a temperature controlled infra-red reference cavity. This work will continue.
 - b) Further development of the Fabry-Perot cavity coupled-suspension system, to extend operation of interferometers to very low frequencies, is in progress. This will continue, together with exploratory experimental work with test interferometer incorporating coupled suspensions.
3. Resource Sharing: The LIGO Laboratory will contribute resources including allocation of appropriate scientific and engineering personnel, research facilities and funding in support of the effort in Item No. 2, as indicated below.
 - a) Research accommodations for CEGG group members while on LIGO research assignment at any LIGO Laboratory site,
 - b) Access to LIGO data through established LSC channels in support of this work.

4. Coordination and Reporting – CEGG Group will perform this research within the structures established by the LIGO Laboratory and the LSC where appropriate. In particular activities described in Item 2 will be carried out within Isolation/Suspension/Thermal Noise Development Group of the LSC. Coordination will include keeping the Group leaders informed of activities and plans, reporting to the group at meetings and telecons, and through technical documents submitted to the LIGO Document Control Center.

In addition, an annual report will be submitted with the update to this Attachment, giving a summary status on research by topic as indicated in Item No. 2, including progress against the milestones if any, significant accomplishments such as new insights/discoveries or publications, issues of concern if any, and an indication of invested time. This Attachment will be updated at least annually with a plan of activities for the succeeding on-year period. These documents will be due one month before the close of the period of performance under this Attachment.

Approved:

Barry Barish
LIGO Laboratory Director

Ronald W.P. Drever
CEGG Principal Investigator

Peter Saulson
LSC Spokesperson

Joseph Giaime
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