LIGO-M070139-00

Attachment OPS to the Memorandum of Understanding LIGO-M050348-00 between the Goddard Gravitational Wave Astrophysics Group (GGWAG) and the Laser Interferometer Gravitational Wave Observatory (LIGO)

For The Period August 15, 2007 - August 14, 2008

This Attachment OPS to the Memorandum of Understanding LIGO-M050348-00 defines the role of the Goddard Gravitational Wave Astrophysics Group (GGWAG) as a Member of the LIGO Scientific Collaboration (LSC) in the areas of detector commissioning, detector characterization, and operations support in the initial LIGO interferometers. The period of performance for the activities in this Attachment is from August 15, 2007 - August 14, 2008.

1. Collaboration

Together, the LIGO Laboratory and the LIGO Scientific Collaboration (LSC) are responsible for implementing and exploiting the initial LIGO detector through its science data runs. LSC groups are encouraged to contribute to the commissioning, characterization, and operation of the LIGO detectors, as members of working groups established by the LIGO Laboratory and the LSC.

2. Participation

During the period August 15, 2007 - August 14, 2008, the members of GGWAG will participate in the initial LIGO detector research program in the following areas:

a. Detector Commissioning

Not Applicable

b. Detector Characterization

We plan to continue our application of the Hilbert-Huang Transform (HHT) to LIGO detector characterization in the following two ways. First, we will use the HHT to study the false alarms (glitches) and non-linear noise mechanisms that appear in the LIGO data stream, and attempt to understand their origins. We will be assisted in this effort by Robert Schofield, the resident expert in environmental noise at LHO. Second, we will develop on-line software for use at the sites, so that timeseries data can be quickly decomposed into HHT-based modes, allowing users to gain a quick look at the decomposed data.

c. Detector Operations

Not Applicable

d. Other Contributions

Not Applicable

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 GGWAG group members while on LIGO research assignment at any LIGO Laboratory site.

Not Applicable

b. Access to LIGO data through established LSC channels in support of this work.

Not Applicable

4. Coordination and Reporting

GGWAG will perform research within the structures established by the LIGO Laboratory and the LSC where appropriate.
In particular, with reference to activities described above:

2a will be carried out in coordination with the LIGO Laboratory Commissioning Leader.

2b will be carried out within the Detector Characterization Working Group of the LSC.

2c will be carried out in coordination with the LHO or LLO Site Head.

This includes 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 one-year period. These documents will be due one month before the close of the period of performance under this Attachment.

5. Computer Code

All computer code delivered to the LSC under this Attachment must be developed in consultation with the LSC Data Analysis Software Working Group (DASWG) and archived, documented and reviewed as determined by that group.

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