This Attachment DAT to the Memorandum of Understanding LIGO-M050429-00 defines the role of the University of Texas at Austin Gravitational Physics Group (UTAGP) as a Member of the LIGO Scientific Collaboration (LSC). In particular, it addresses data analysis activities in support of the initial LIGO interferometers. The period of performance for the activities in this Attachment is from August 15, 2008 - August 14, 2009.

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. The LSC has organized the data analysis effort into search groups which coordinate analysis, review, and publication on behalf of the collaboration. LSC groups are encouraged to participate in one or more of these groups.

MOU Attachment DAT defines the contributions of each participating group to the data analysis development groups.

2. Participation

During the period August 15, 2008 - August 14, 2009, the members of UTAGP will participate in the analysis of initial LIGO data in the following areas:

a. Binary Inspirals

Data analysis

We will contribute to developing and using search pipelines for coalescence of compact-object binaries. This work will be carried out in collaboration/consultation with the inspiral (Compact Binary Coalescence, CBC) group specifically to study LIGO S5 waveforms. We will participate in CBC telecon discussions.

We will concentrate on coalescences of high-mass objects (total mass exceeding approximately 30 solar masses). In this range the inspiral waveform contributes
little, but the merger and ringdown signals contribute a significant fraction of the LIGO/Virgo/GEO signal-to-noise ratio. Hence this work addresses important areas of the parameter space of binary systems. There have been recent significant advances in building templates for inspiral, merger and ringdown by modeling analytically the non-perturbative information contained in numerical-relativity simulations. However, merger templates are still being developed theoretically. They are being applied, concurrently as they are developed, to the high-mass data analysis. This analysis will use the best-practice high-mass compact merger templates available.

We will work with the high-mass search effort in the Compact Binary Coalescence group, to develop the pipeline for that particular search. We will be responsible for the analysis of two months of S5 data for the high-mass search. We will work with the CBC group to complete the S5 high-mass analysis; we will participate in the code and analysis review, and in drafting the high-mass paper. We plan to participate in the same search on the future S6 data, including preparing the analysis pipeline for it.

This work will be carried out by M. Frei and R. Matzner. Frei is 50% and Matzner contributes 25% to this effort.

b. Bursts
   
   *Not Applicable*

c. Stochastic
   
   *Not Applicable*

d. Continuous
   
   *Not Applicable*

e. 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 UTAGP 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
UTAGP 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 within the LSC Inspiral Search Group.

2b will be carried out within the LSC Burst Search Group.

2c will be carried out within the LSC Stochastic Search Group.

2d will be carried out within the LSC Continuous Waves search Group.

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.
Jay Marx
LIGO Laboratory Director

Richard Matzner
Principal Investigator(s)
UTAGP

David Reitze
LSC Spokesperson
Attachment OUT to the Memorandum of Understanding LIGO-M050429-00 between the University of Texas at Austin Gravitational Physics Group (UTAGP) and the Laser Interferometer Gravitational Wave Observatory (LIGO) For The Period August 15, 2008 - August 14, 2009

This Attachment OUT to the Memorandum of Understanding LIGO-M050429-00 defines the role of the University of Texas at Austin Gravitational Physics Group (UTAGP) as a Member of the LIGO Scientific Collaboration (LSC) in support of Education and Outreach to the broader community. The period of performance for the activities in this Attachment is from August 15, 2008 - August 14, 2009.

1. Education and Outreach

As a frontier physics effort, LIGO offers a unique opportunity to inspire interest in science among students and to educate the broader community. The LIGO Laboratory supports a broad program of education and outreach to take advantage of these opportunities. Activities to attract and educate visitors take place at both Observatories, as well as the development of educational materials for use there and elsewhere. The LIGO Laboratory is building a Science Education Center at the Livingston Observatory, and is participating with local partners to make it a vehicle for science education throughout the region. LSC groups are invited to participate in these activities, and to suggest others, with the goal of leveraging activities to make a greater impact. This MOU Attachments defines the role and responsibilities of groups in this development group.

2. Participation

During the period August 15, 2008 - August 14, 2009, the members of UTAGP will participate in in LDG in the following areas:

   a. Educational Materials Developed

Matzner will develop a 2-week (four session) module for an introductory (Freshman) Physics course, discussing the generation of gravitational radiation and its detection in LIGO (and other laser-interferometer detectors). This work will be done with undergraduate students in Physics at The University of Texas at Austin. It will be delivered as part of a course taught by Matzner at The University of Texas.
at Austin in Fall 2008. Deliverables will include four presentations (powerpoint) developing these ideas, and a series of projects/activities related to the presentations.

b. 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 UTAGP 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

UTAGP will perform 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 with the LIGO Observatories Educational and Outreach Leaders. 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.
Jay Marx
LIGO Laboratory Director

Richard Matzner
Principal Investigator(s)
UTAGP

David Reitze
LSC Spokesperson
Attachment Z to the
Memorandum of Understanding LIGO-M050429-00
between the University of Texas at Austin Gravitational Physics
Group (UTAGP)
and the
Laser Interferometer Gravitational Wave Observatory (LIGO)

For The Period
August 15, 2008 - August 14, 2009

This Attachment Z to the Memorandum of Understanding LIGO-M050429-00 lists the members of University of Texas at Austin Gravitational Physics Group (UTAGP) participating in LIGO Scientific Collaboration (LSC) development group activities in support of the initial LIGO interferometers. The period of performance for these activities is from August 15, 2008 - August 14, 2009.

Faculty:

The Faculty category includes all “faculty rank” LSC members. This includes professorial appointments, research faculty appointments, teaching faculty appointments, lecturer and reader appointments, and similar appointments, and visiting appointments in all these categories.

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Phone:
  Voice: 1 512 471 5062
  Fax: 1 512 471 0890
Email:
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  Forwarding: matzner2@physics.utexas.edu
Postal Address:
  physics department, 1 university station C1600
  City: Austin
  State: TX
  Postal Code: 78712
  Country: USA

Technical Staff:

The Technical Staff category includes all non-PI LSC members with scientist, engineer, computer systems administrator or programmer, technician, and similar appointments, and visiting appointments in all these categories.

Postdoctoral Scholars:
Name: Krause, Todd  
Postal Address: 3569 Lake Austin Blvd  
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Fax: 1 512 471 1  
Email:  
@LIGO.Org: todd.krause@LIGO.Org  
Forwarding: bobtodd@math.utexas.edu  

Graduate Students:  
Name: Frei, Melissa  
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Fax: 1 512 471 0890  
Email:  
@LIGO.Org: melissa.frei@LIGO.Org  
Forwarding: mafrei@physics.utexas.edu  

Name: McIvor, Greg  
Postal Address: 806 W. 24th St.  
Voice: 1 610 800 9793  
Fax:  
Email:  
@LIGO.Org: greg.mcivor@LIGO.Org  
Forwarding: gmcivor@physics.utexas.edu  

Undergraduate Students:  

Administrative Staff:  
The Administrative Staff category allows the listing of administrative aides and other staff members who perform essential support services in or for LSC member groups, but are not involved in the LIGO Scientific Collaborations engineering or scientific work. Personnel who are involved in the LSC's scientific or engineering work, including computer system administration and programming, should be listed under other categories. Personnel listed as Administrative Staff may be designated as a point of contact or proxy, but do not appear as authors on LSC publications, do not count toward a group's council delegate allocation, may not serve as council delegates, and do not increase a group's shift obligation.

FTE Commitment:  
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Roles:

Principal Investigators: Matzner, Richard
Membership Point-Of-Contact: Matzner, Richard
Group PIO/Press Coordinator: 
Proxies:

Author Eligible | Council Delegates
---|---
Matzner, Richard | Matzner, Richard
Krause, Todd | Matzner, Richard
Frei, Melissa | Matzner, Richard

Approvals:

Jay Marx
LIGO Laboratory Director

Richard Matzner
Principal Investigator(s)
UTAGP

David Reitze
LSC Spokesperson