



**Attachment DAT to the
Memorandum of Understanding LIGO-M070064-00
between the Eotvos University (EOTVOS)
and the
Laser Interferometer Gravitational Wave Observatory (LIGO)
For The Period
August 15, 2008 - August 14, 2009**

This Attachment DAT to the Memorandum of Understanding LIGO-M070064-00 defines the role of the Eotvos University (EOTVOS) 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 EOTVOS will participate in the analysis of initial LIGO data in the following areas:

a. Binary Inspirals

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b. Bursts

EGRG will apply similar techniques to those developed for narrow band burst searches to look for other types of signals in S5 data.

Since last years MoU review we have finished developing and testing two general methods, the so-called Locust and Hough algorithms to search for narrow-band signals of moderate frequency evolution and limited duration in datastreams of

gravitational wave (GW) detectors. A technical paper on the method description and test results was successfully published in September 2007 (P. Raffai et al 2007 CQG 24, S457-S468). Robustness of the two algorithms made it possible to adapt the methods to GW signals of compact binaries formed by companions with non-zero spin. A technical paper discussing the search method and sensitivity tests in case of spinning black hole binary (SBHB) signals is currently in preparation to be published in CQG. After publishing this second paper, we are planning to start running both codes to search for narrow-band burst signals in LIGO S5 data. Papers presenting the results of the two search processes are proposed.

As a contribution to the work of the ExtTrig group, P. Raffai continues to review the S5 X-pipeline GRB search results to be published in an observational paper. Also, P. Raffai is preparing a paper discussing the results of the detailed study on the host galaxy of the GRB070201 event. The aim of this paper is to put more stringent limits on the distance of the GRB070201 source than as given by LIGO burst signal analysis methods (B. Abbott et al [LSC] 2007 Rep. No. LIGO-P070081-B). In the analysis study images from the SDSS and LGSS catalog is being used to map the galaxy distribution and estimating possible host galaxy distances for galaxies found in the EM observation error box.

We propose to include Laszlo A. Gergely in our group in the future. His proposed activity is to investigate the complicated quasi-precessional motion of the orbital plane and spins in a compact binary system due to rotational, mass quadrupolar and magnetic dipolar moments to high post-Newtonian orders. He also proposes to engage in data analysis with students. During this year we would like to discuss his proposal and include him next year if an agreement is reached.

c. Stochastic

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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 EOTVOS 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.

Access to LIGO computing resources and expertise in support of this work. Access to all data.

4. Coordination and Reporting

EOTVOS 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.

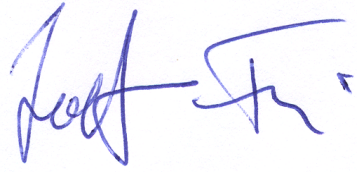
This Attachment will be updated at least annually with a plan of activities for the succeeding one-year period. These documents will be due one month before the close of the period of performance under this Attachment.

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



Zsolt Frei
Principal Investigator(s)
EOTVOS



David Reitze
LSC Spokesperson