

**Attachment ACF to the**  
**Memorandum of Understanding (LIGO-M050360-00-M)**  
**between the**  
**Moscow State University Relativity Group (MSURG)**  
**and the**  
**Laser Interferometer Gravitational Wave Observatory (LIGO)**  
**August 15, 2005**

This Attachment ACF to the Memorandum of Understanding LIGO-M050360-00-M defines the role of the Moscow State University Relativity Group (MSURG) as a Member of the LIGO Scientific Collaboration (LSC) and a member of the Advanced Detector Configurations Development Group (ADCDG). The period of performance for the activities in this Attachment is from August 15, 2005 to August 15, 2006.

1. Advanced Detector Configurations Development Group - The Advanced Detector Configurations Development Group (ADCDG) is the scientific collaboration for defining and developing entirely new advanced interferometers. It is expected that this development group will pursue research in dual recycling, resonant sideband extraction, Sagnac interferometers, systems with non-transmitting optics and other advanced configurations. 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 MSURG will participate in ADCDG in the following area:  
  
*Interferometer Configurations* – F.Ya.Khalili and S.P.Vyatchanin are planning to continue the analysis of different new schemes of LIGO readout and topologies which has to permit to obtain the sensitivity better than SQL.
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 MSURG 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 – MSURG 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 the Advanced Detector Configurations 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:

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Barry Barish  
LIGO Laboratory Director

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Vladimir Braginsky  
MSURG Principal Investigator

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Peter Saulson  
LSC Spokesperson

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Ken Strain  
ADCDG Leader