

Attachment-B
between
KAGRA, LIGO and VIRGO Scientific Collaborations
Agreement for data sharing and analysis
during the KAGRA construction and commissioning period

A. Purpose of agreement:

The purpose of this MOU/attachment is to define the collaboration scope and policies for data analysis activities between KAGRA, LIGO and VIRGO during the period of design, building and commissioning of KAGRA.

The aim of this work is to build a common background on data analysis by sharing knowledge and practices in order to prepare the exploitation of the future KAGRA - Advanced LIGO - Advanced Virgo network of Gravitational waves detectors.

This MOU/attachment defines the data sharing and data analysis policies during the construction and commissioning of KAGRA. We anticipate working toward a new MOU/attachment to define policies as agreed to by all parties by which KAGRA will become part of the global network with full data sharing, once comparable sensitivities are achieved. The rules on publications for that data sharing will be defined in that attachment.

Separate MOU/attachments between any two of these three scientific collaborations define policies for technical collaboration between them for the same period as this MOU/attachment.

LIGO and VIRGO are carrying out jointly all their data analysis activities under the umbrella of the MOU between LIGO and Virgo (LIGO-M060038-A-M, VIR-PLA-DIR-100-223), and the corresponding attachment (LIGO-M06322-v2, VIR-0324A-11). This MOU does not change the terms of this existing agreement between LIGO and VIRGO, which remains fully active.

B. Description and organization of the planned collaborative work

The purpose of this collaborative work is for all parties to benefit from the expertise of the other group to build a common background, tools and pipelines for data analysis by sharing knowledge and practices in order to prepare the exploitation of the future KAGRA - Advanced LIGO - Advanced Virgo network of gravitational waves detectors.

KAGRA members will be able to access all LIGO-Virgo data taken up to the date of this agreement, as well as for all parties to data from engineering runs from either LIGO, Virgo or KAGRA detectors during the time of this agreement. This access does not include authorship rights on observational papers by the LIGO and Virgo Collaborations.

Access to collaboration web sites and/or mailing lists may be granted to facilitate working together. Scientists of all parties may be allowed to attend LSC-VIRGO and KAGRA data analysis meetings to build-up a good relationship and prepare future joint data analysis. The leaderships of all parties will mutually agree on its implementation. It is expected that this exchange of people will become more frequent and easier as the parties get closer to the joint exploitation of all instruments.

The KAGRA spokesperson will appoint a liaison person to coordinate data analysis activities with the LSC and VIRGO data analysis coordinators, who may attend meetings of the LSC-Virgo Data Analysis Council.

C. Appropriate Use of Data and Shared Information

All parties agree that any technical information, data or data products received from the other parties shall be used only for the purposes of the collaborative work covered by this agreement, and shall be held confidential (unless already made public).

Senior scientists should ensure that all involved persons, including students and technical staff, understand and respect the sensitive nature of the data and information exchanged.

D. Publications

Since the purpose of the activities covered by this MOU is an exchange of expertise, not a joint

data analysis activity, we do not anticipate joint papers describing results derived from the exchanged data.

However, publication (or dissemination¹) including KAGRA authors resulting from the activities might be useful, especially since short author list papers on *collaboration open data*² are allowed by LIGO and Virgo. The spirit of such publication should be a joint activity, not a publication on LIGO-Virgo data (reciprocally KAGRA) by independent authors from KAGRA (reciprocally LIGO-Virgo). Therefore KAGRA members may join LIGO and/or Virgo members in short author list papers or presentations on LIGO-Virgo collaboration open data. Such papers or presentations should be announced well in advance to the joint LIGO-Virgo Editorial Board to verify that the scope of the paper is correct, that the choice of author list is appropriate, and that the proper data set is used. LIGO or Virgo members may also join KAGRA members on KAGRA publication on KAGRA engineering data. In that case, they must follow the KAGRA rules of publications. The papers will be circulated to the LIGO and Virgo Collaborations before being submitted for publication.

If a KAGRA member contributes significantly to a paper by the LIGO Scientific Collaboration and the Virgo Collaboration on LIGO-Virgo data analysis, she/he will be considered as an added author to the list of authors, as an external collaborator.

If a KAGRA (reciprocally LIGO-Virgo) student plans to use for his/her PhD or MSc thesis the LIGO-Virgo (reciprocally KAGRA) data shared under the scope of this agreement he/she should ask for authorization from data analysis coordinators before selecting a thesis topic.

¹ Dissemination includes presentations at conferences, conference proceedings, papers or notes in any journal (peer-reviewed or otherwise), public archives, press releases or press interviews, and any web page accessible without authorized Collaboration credentials.

² Collaboration open data are described in the section 2.7.1 of the document LIGO-M060322-v2 / VIR0324A-11. These are data which could be used by collaboration members in short author list papers to illustrate aspects of data analysis techniques which address imperfections found in real data, or to support detector characterization and data quality studies. The designation of collaboration open data is made jointly by the LIGO and Virgo managements. Normally, data from a given science run are eligible to qualify for collaboration open status after the analyses are concluded. Engineering run data or data collected outside a formal run could also be declared collaboration open data.

E. Term of this agreement

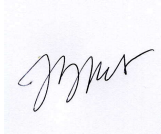
This agreement will come into force beginning on the signing date, and last for 3 years, and may be renewed by agreement of all parties. A follow-on MOU is anticipated when sensitive data taking is begun. This agreement may be terminated by the unilateral request of any signing party after a termination period of six months.

Gabriela González, LSC Spokesperson

Date

Takaaki Kajita, KAGRA PI (Principal Investigator)

Date



ARTEMIS, Observatoire de la Cote d'Azur, Dec. 3rd 2012

Jean-Yves Vinet, Virgo Spokesperson

Date