

# Guideline for joining KAGRA collaboration

(ver 3.0)

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maintained by KSC and EO

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This document<sup>1</sup> explains the procedures to participate and to maintain the KAGRA collaboration for each institute and/or each individual.

## 1 Definition, duties and privileges of KAGRA collaborator

- (1) A KAGRA collaborator denotes a person who conducts cooperative researches as the KAGRA collaboration, who observes the rules and regulations of the collaboration.
- (2) A KAGRA collaborator is responsible for contributing to the KAGRA project and for promoting its scientific studies. The collaborator is supposed to comply with the rules for collaborative researches and to cooperate with various activities hosted by KAGRA collaboration.
- (3) A KAGRA collaborator can conduct researches on gravitational waves and related topics using KAGRA resources (facilities, experimental peripherals, computers, etc.).
- (4) KAGRA collaborators can attend KAGRA's internal (closed) meetings, e.g. face-to-face (F2F) collaboration meeting, TV-conferences, sub-group meetings. The F2F is the most important KAGRA-collaboration meeting, which is held by 'face-to-face'. At F2F meeting, collaborators exchange the latest information and discuss the future of KAGRA collaboration.
- (5) By declaring ethical statement for confidential matters, KAGRA collaborators can post and receive information through mailing lists, web servers, and news letters.
- (6) In addition to, a KAGRA collaborator will have the following qualifications by additional approval processes:
  - Authorship for KAGRA collaboration papers
  - Membership of KSC (KAGRA Scientific Congress)
  - Access to LIGO/Virgo/KAGRA observation data, and the confidential information

(See different documents<sup>2</sup> and rules for fine details of these.)

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<sup>1</sup><https://gwdoc.icrr.u-tokyo.ac.jp/cgi-bin/DocDB/ShowDocument?docid=7082>

<sup>2</sup><http://gwwiki.icrr.u-tokyo.ac.jp/JGWwiki/KAGRA/KSC/FAQ> or  
<http://gwwiki.icrr.u-tokyo.ac.jp/JGWwiki/KAGRA/KSC/YourActionRequired>

## 2 Eligibility for KAGRA collaboration

- (1) Participation unit in KAGRA collaboration is a research “institute”. A “research institute” or an “institute” mentioned here can be interpreted as a unit of a research group, which might be a laboratory, department, faculty of university, or research institute. Of course, “KAGRA collaborators/group in XXX university” does not mean that the whole of the faculty of particular university become a subset of KAGRA collaboration. In an irregular case, KSC (KAGRA Scientific Congress) or EO (Executive Office) will make an individual judgment.
- (2) A KAGRA collaborator must belong to one of the participating “research institutes”, and it is necessary to be approved to become a KAGRA collaborator at that institute.
- (3) In addition, a KAGRA collaborator must fulfill one of the following qualifications.
  - Scientist who is employed by that institute, i.e. full-time faculty, postdoctoral researcher, visiting researcher, or equivalent of them.
  - Graduate or undergraduate student who belongs to the laboratory and is supervised by full-time faculty who is a KAGRA collaborator. Undergraduate students should be in the final grade (senior). In the case that the supervisor of the student is not a KAGRA collaborator, another KAGRA collaborator who is a full-time staff in the same institute have to be a reference of the student.
  - Engineer or technical staff, who employed by that institute.
  - The person who retires but have been a KAGRA collaborator can still being a collaborator in the institute.
  - The person who has strong connection of that institute with a supporting recommendation from the representative (group leader) of the institute.

## 3 Procedures of participation to KAGRA collaboration

### 3.1 Participation of research institutes

- (1) Notification of the participation intention

An institute that wish to newly participate in the KAGRA collaboration should contact first to the board of KSC, [kscboard\\_at\\_icrr.u-tokyo.ac.jp](mailto:kscboard_at_icrr.u-tokyo.ac.jp).

The submission of the following documents are requested.

- Group name and a member list (name and position of each member)
- Group leader’s publication list (or link to website for these information)
- Group members’ publication lists (or links to website for these information)
- Research plans as a KAGRA collaboration

The KSC board will share these information to relevant sub-groups’ leaders in KAGRA. After their discussion, if the application is accepted, the board will invite the group to KAGRA face-to-face meeting.

(2) Approval procedure at KAGRA face-to-face meeting (F2F meeting)

- 1) The KSC board will prepare a session for the applied institute at the F2F meeting (normally held three times a year).
- 2) The institute's representative is supposed to introduce the organization, members, research plans, and mention how the group can contribute to the KAGRA collaboration.
- 3) The approval/disapproval of the participation will be decided by voting by KAGRA collaborators.

With approval of more than two thirds of collaborators participating in the session of F2F at that time, the participation is accepted.

### **3.2 Participation of individual collaborators**

Whether a person who fulfills the above qualifications participates in the KAGRA collaboration or not, in principle, will be determined by the institute which he/she belongs to.

## **4 Procedures of update and withdrawal**

### **4.1 Procedures of update**

Currently, collaborator information (name, affiliation, etc) is maintained by the 'collaborator-list managers' appointed by the KSC board.

Each participated institute will decide who will be the KAGRA collaborators, and a representative of the institution. The representative of the institute will give a notice to this collaborator-list managers about the latest update of collaborators.

- (1) Addition of a new collaborator

The institution will report it promptly.

- (2) Update

KSC prompts the update by the end of April in every year. For countries whose budget year or school year differs from Japan, they will update when new year starts.

- (3) Withdrawal

If a student graduated, he/she will be automatically withdrawn as losing collaborator's qualification. Withdrawal can be decided by him/herself or by the institute.

### **4.2 Movement of individual collaborators**

#### **4.2.1 For person moving to another institute in the KAGRA collaboration**

If a KAGRA collaborator moved to another KAGRA-participating institute, he/she can continue to be a collaborator by approval of the newly belonging institute.

#### 4.2.2 For person moving to an institute not participating in the KAGRA collaboration

In the case that a KAGRA collaborator moved to a new place to KAGRA collaboration, he/she is supposed to follow the procedure for new institute participation (see: section 3.1), that is, make a presentation at a F2F meeting and has to be approved by the vote of KSC members.

However, if he/she satisfies the following two conditions, then the voting process at F2F can be skipped:

- (a) He/she can keep conducting researches for KAGRA at the new position.
- (b) The KSC board and his/her subgroup's chief independently approve his/her current activities and also agree with that his/her activities can be maintained at the new position.

If these conditions are satisfied, then at the F2F meeting instead of the formal presentation he/she is requested to make a short talk on his/her future research plans.

#### 4.3 Withdrawal of a research institute

When an institute plans to stop contributing to the KAGRA collaboration, then the withdrawal can be made by noting it to the KSC board.

Once the institute has left the KAGRA collaboration, the collaborators belonging to that institute will also automatically be withdrawn.

## 5 Expulsion

If it is judged that a participating institute or individual is improper for the KAGRA collaboration, it can be expelled by KSC's decision or EO's judgment.

## A Description of KAGRA

KAGRA is a 3 kilometer laser interferometric gravitational wave antenna built at Kamioka underground site in Japan. One of its characteristic features is to be a cryogenic interferometer; the test-mass mirrors that form 3-km Fabry-Perot arm cavities are cooled down to cryogenic temperature of around 20K, so as to reduce the effect of thermal noises. Stable environment of the underground site and cryogenic technologies will be helpful to obtain fruitful sciences in the field of gravitational-wave astronomy, both in the first detection era and in the subsequent era of gravitational wave astronomy.

KAGRA project is supported by MEXT (Ministry of Education, Culture, Sports, Science, and Technology) of Japan. KAGRA is hosted by Institute for Cosmic Ray Research (ICRR), the University of Tokyo and co-hosted by the High Energy Accelerator Research Organization (KEK) and National Astronomical Observatory of Japan (NAOJ). The KAGRA collaboration is composed of more than 360 individuals from more than 100 institutions in 15 countries and regions around the world.

The decisions of KAGRA management and operations are taken by the Principal Investigator, who is also the chair of the executive office (EO) of KAGRA. The decisions of scientific

direction and strategy including R&D of the KAGRA collaboration are taken by the KAGRA Scientific Congress (KSC), which consists of the proportional representatives from each group.

In October 2019, KAGRA signed up a memorandum of agreement (MoA) on a research collaboration between KAGRA, LIGO and Virgo. The LVK network of gravitational wave research has started from Observation 3b period.

For more information, please refer

- the public webpage (<https://gwcenter.icrr.u-tokyo.ac.jp>) or
- the KAGRA wiki (<http://gwwiki.icrr.u-tokyo.ac.jp/JGWwiki/KAGRA>).

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