

# Guideline for joining KAGRA collaboration

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Maintained by KSC and EO

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This document<sup>1</sup> explains to each institute and/or individual the procedures on how to participate and to maintain its affiliation with the KAGRA collaboration.

## 1 Definition, duties and privileges of a KAGRA collaborator

(1) A KAGRA collaborator denotes a person who conducts cooperative research as a member of 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 expected to comply with the rules for collaborative research and to cooperate with various activities hosted by the KAGRA collaboration.

(3) A KAGRA collaborator shall be entitled to conduct research on gravitational waves and related topics using KAGRA resources (facilities, experimental peripherals, computers, etc.).

(4) KAGRA collaborators may attend KAGRA's internal (closed) meetings, e.g. face-to-face (F2F) collaboration meeting, TV-conferences, and sub-group meetings. The F2F is the most important KAGRA-collaboration meeting, which is held by 'face-to-face'. At the F2F meeting, collaborators exchange the latest information and discuss the future of KAGRA collaboration.

(5) By declaring an ethical statement for confidential matters, KAGRA collaborators shall be allowed to receive information through mailing lists, web servers, and news letters.

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

(6) In addition to the above, a KAGRA collaborator will be qualified to have the following rights after undergoing 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.)

## 2 Eligibility for joining the KAGRA collaboration

(1) The minimum unit for participation in the KAGRA collaboration is a research “institute”. A “research institute” or an “institute” as mentioned herein can be interpreted as a team of collaborating researchers in the unit of a research group, which might be a laboratory, department, faculty of university, or research institute. When referring to “KAGRA collaborators/group in XXX university,” in no way should it be construed as meaning that the whole faculty of a particular university to become a subset of the KAGRA collaboration. KSC (KAGRA Scientific Congress) or EO (Executive Office) shall have the authority to make individual judgments as to whether or not an individual or group satisfies this condition.

(2) For becoming a KAGRA collaborator, an individual must: (a) belong to one of the participating “research institutes”, and (b) be approved as a KAGRA collaborator at the institute to which he/she belongs.

(3) In addition, an individual must fulfill one of the following qualifications.

- A scientist who is employed by that institute, i.e. full-time faculty, postdoctoral researcher, visiting researcher, or equivalent of them.
- A graduate or an undergraduate student who belongs to the laboratory and is supervised by a full-time faculty who is a KAGRA collaborator. Undergraduate students should be in the final grade (senior). In the case where the supervisor of the student is not a KAGRA collaborator, another full-time staff in the same institute who is a KAGRA collaborator must serve as a reference for the student.
- A fifth-year student, or a student enrolled in the advanced course at the National Institute of Technology in Japan, who is supervised by a full-time faculty who is a KAGRA collaborator.
- An engineer or a technical staff, who is employed by that institute.

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<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>

- A person who has retired but has been a KAGRA collaborator and retains his/her status as a collaborator at the institute to which he/she belongs.
- A person who has a strong connection with an institute and who has been issued a supporting recommendation from the representative (group leader) of the institute.

### 3 Procedures for participation in the KAGRA collaboration

#### 3.1 Participation of research institutes

##### (1) Notification of intent to participate

An institute that wishes to newly participate in the KAGRA collaboration should first contact the KSC board, kscboard at icrr.u-tokyo.ac.jp, and submit the following documents:

- Group name and a member list (name and position of each member)
- Group leader's publication list (or a link to the website for these information)
- Group members' publication lists (or links to websites for these information)
- Research plans for collaborative research under the KAGRA collaboration

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

##### (2) Approval procedures at the KAGRA face-to-face meeting (F2F meeting)

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

With approval of more than two thirds of those collaborators present in the session of F2F at that time, the institute's participation shall be approved.

#### 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. In principle, the institute to which an individual collaborator belongs to shall determine whether or not such individual fulfills the qualifications specified in Section 2, clause (3) of this document. Notwithstanding the foregoing, if there are any questions as to whether a certain individual collaborator is qualified to participate in the KAGRA Collaboration, the KAGRA Scientific Congress (“KSC”) or Executive Office (“EO”) shall have the full authority to decide whether to approve or disapprove the participation of such individual.

## 4 Procedures for updates and withdrawal

### 4.1 Procedures for updating records

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

Each participating institute shall appoint an individual to be its representative for the KAGRA collaboration. The representative of the institute will give a notice to the collaborator-list managers about the latest update of collaborators.

#### (1) Addition of a new collaborator

In the event that an institute approves a new member to join its group as a KAGRA collaborator, it shall promptly report such addition to the collaborator-list managers.

#### (2) Update

KSC will prompt each institute to provide an update by the end of April of each year. Institutes who are based in countries whose budget year or school year differs from Japan shall provide an update whenever their new year starts.

#### (3) Withdrawal

Any KAGRA collaborator may decide to withdraw, or any institute to which a KAGRA collaborator belongs to may decide to make a KAGRA collaborator withdraw from participation in the KAGRA Collaboration. If a KAGRA collaborator loses eligibility to participate in the KAGRA Collaboration, he/she will automatically lose his/her KAGRA collaborator status. However, if an individual wishes to continue being a KAGRA collaborator even after losing eligibility, he/she may keep his/her KAGRA collaborator status as long as he/she is included on the latest author list.

## 4.2 Movement of individual collaborators

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

If a KAGRA collaborator moves from one institute to another institute who participates in the KAGRA collaboration, he/she can continue to be a collaborator by obtaining approval from the institute to which he/she newly belongs.

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

In the case that a KAGRA collaborator moves to a new organization which does not take part in the KAGRA collaboration, he/she must 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 voting by KAGRA collaborators.

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

- (a) He/she is capable of continuing his/her research 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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