

**THE INTERNATIONAL ADVISORY COMMITTEE
ON THE J-PARC PROJECT**

REPORT

Meeting held February 24th-25th, 2023

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EXECUTIVE SUMMARY

The International Advisory Committee (IAC) on J-PARC met at J-PARC on February 24-25 2023 to review the progress and prospects since the last meeting in February 2022.

The IAC thanks J-PARC staff for the considerable efforts put into the preparation of the material, the efficient running of the meetings, and their warm hospitality. It was particularly good to be able to meet in person after three years of video meetings. The committee was able to fulfill its mandate as set by the director (see Appendix III).

The IAC expresses its appreciation for the presentations of selected results by early career scientists in the parallel sessions.

The IAC thanks J-PARC for addressing many of the recommendations made in the 2022 report.

GENERAL STATUS OF THE PROJECT

Findings:

- The J-PARC accelerators have maintained excellent performance and availability since the IAC meeting in 2022. 95% availability (for another year) is truly outstanding!
- Facility operation and the science program have also continued at a high level.
- Operation in the later part of year was only enabled by a supplementary budget to meet the increased cost of electricity.
- The recent rapid increase in the cost of electricity, with a fixed budget, means that the planned number of operational cycles in the next FY may not be achievable. This obviously has direct consequences for the science programmes. The MR programmes in particular already have a growing backlog of experiments due to the small number of cycles in recent years.
- The entire maintenance budget is equivalent to about half a year of electricity cost, so deferred maintenance cannot compensate for the increased electricity cost.
- The overall staff numbers (~600 staff + ~150 contractors) are low to support a scientific infrastructure of the scale and sophistication of J-PARC. The staff age distribution is of concern - the KEK average age is even increasing.
- The time required for NRA approval of facility modifications has shown a slight decrease, possibly due to collaboration with universities in helping dialogue with the authorities, but remains a risk to efficient operations.
- The RADIATE collaboration on targets is creating helpful international links.
- J-PARC are proposing to develop a 30 year plan within the next 2 years.
- The J-PARC particle and nuclear physics programme is broad and impressive.
- MUSE has made good progress but has many technically challenging projects, e.g. laser, muon microscope, but staffing and funding will limit the ability to fully deliver everything.
- MLF plan to increase to a 2 year target replacement schedule after the next target. The long time required for target replacement is a constraint on the operations schedule.
- MLF are discussing the possible implementation of user fees.
- JAEA has brought JRR-3 back into operation, running 151 days for users in the last year with 300 proposals. MLF and JRR-3 have started a user access collaboration through J-JOIN.
- A policy has been developed that clarifies for users what their obligations are with regard to being physically present at J-PARC for experiments.

- MEXT have stated, in the development of Roadmap 2023, that J-PARC will continue to receive funding through the Large-Scale Scientific Frontier Promotion Projects. However, they have also stated some clear expectations: achieve power on target as previously planned, deal with facility aging, provide stable operation, develop staff career paths, increased support for public understanding.
- Apart from the additional budget in the last FY to partially compensate for the electricity cost increase, KEK and JAEA budgets for J-PARC operations have effectively been flat for the last 3 years. Given that costs other than energy have also been increasing significantly, e.g. materials and equipment, this will put significant strain on the J-PARC programme.
- The J-PARC ADS program has increasing potential importance for the energy requirements of Japan. However, the continuous decrease of resources for this program are putting it in jeopardy. Due to the strategic importance of closing the fuel cycle, including long term reduction of the high level waste burden (minor actinides), it is advisable to look for a top down approach for funding the ADS program.
- Safety performance is excellent.
- There are good efforts to support public understanding.
- The access road is extremely important for the future of the site as a user facility. The IAC strongly support it.
- The responsibilities for radioactive waste management are complex, and there are budget implications for J-PARC that are not yet fully understood or resolved.

Recommendations:

- The current situation is challenging. J-PARC needs to develop an overall strategy and a set of scenarios which can be discussed with its funders (MEXT, JAEA) and takes account of their priorities. Deferred maintenance could only compensate for a small proportion of the missing budget, is cumulative so is not a long term saving, and would threaten the excellent J-PARC availability. The IAC strongly recommend that J-PARC do not consider deferred maintenance as an option.
- Significantly reduced operating time will mean that some difficult priorities will have to be made; for example, prioritising between MR beam to the hadron hall or the neutrino target. This priority does not need to be made immediately, but J-PARC needs to consider how it would make such a decision.

- J-PARC needs both a short term and a long term strategy regarding increasing electricity costs. Even if the cost stabilises, or even decreases from the current level, there will be increasing pressure to use less energy. IAC recommends that the approach has to be to maximise the use of whatever operating time is available. Partly this may be done through more staff to support the (scientific) operation. Partly it may be done through capital investment, e.g. operating more instruments/experiments simultaneously, though this would also require more staff. IAC has long been advocating increasing the support staff, particularly for KEK. The increase in electricity costs will hopefully make this argument more persuasive.
- The present steady systematic approach to increasing beam power while prioritising availability should be continued, particularly if there is a risk that the number of cycles may be reduced. The possible gains in the experimental programme through accelerating the power ramp up are marginal compared to the risk of premature target failure.
- Despite the challenges in being able to fulfil it, J-PARC nevertheless needs to develop a long term plan for staffing and skills. This is linked to the MEXT 'career structure' requirement.
- The Hadron Hall extension project is ranked as the top priority in the KEK PIP 2022 plan and should get appropriate support. Planning for the construction phase should engage the communities of the ongoing and future experiments.
- The muon microscope project needs a feasibility study and increased user engagement before there is too much investment.
- MLF should continue to explore ways to gradually increase publication numbers. However, IAC considers that these are reasonably in line with other facilities.
- If TS2 is to become a reality then MLF needs to further develop the concept, with an indicative timescale, and engage the user community in developing the ideas and support for the project.
- MLF should consider whether it should prioritise national users if beam time is restricted.
- The recent decision by the Japanese government to return to nuclear power generation and reduce the reliance on coal presents an excellent opportunity to urge them to increase the ADS budget. However, the current ADS programme is sub-critical if the intention is ever to really develop ADS capability. IAC recommends that J-PARC implements a top down strategy (arguing for the necessary resources to deliver a viable programme) while maintaining the current bottom up strategy (keeping a short term level of activity with the available resources and developing all potential collaboration opportunities).
- Even though the accelerator technology required for ADS is different from existing J-PARC accelerator technology, synergies and development related to global beam reliability will be profitable for the J-PARC accelerator and should be encouraged.

- J-PARC should continue to work in collaboration with universities to seek an improvement in NRA approval times. However, until the situation is seen to improve J-PARC unfortunately needs to forward plan on the basis of long approval times.
- Efforts to maintain a strong safety culture should continue.
- J-PARC needs to continue working on the long term plan for dealing with all radioactive waste, including making the necessary inter-organisational agreements, clarifying the costs and securing the budget.

SAFETY

Findings:

- The J-PARC safety record is excellent.
- J-PARC have carried out safety system audits every year since 2014. In response to an IAC 2022 recommendation, in 2022 a number of staff working on site were interviewed, as well as managers.

Recommendations:

- As a way of further embedding a good safety culture, the IAC would suggest a safety survey (questionnaire) across all staff. There are examples from similar organisations that could easily be adapted.

PUBLIC AFFAIRS AND COMMUNICATION

Findings:

- J-PARC is extremely active in public affairs and communications. These activities have contributed effectively to improving the societal role of J-PARC.
- Almost all recommendations from IAC2022, that is gender balance, English communication, and face-to-face communication with local governments, have been improved.

Recommendations:

- The activities have been excellent in communicating the importance of basic science to society. IAC recommends that this should continue with new activities. Considering the recent social and financial situation in Japan, it is more important than ever to make efforts to gain the understanding of society.
- It is important to continue to improve all of the activities recommended by IAC2022 (gender balance, English communication, face-to-face communication with local governments)
- A more detailed strategy should be developed. Clarify the division of labour between KEK and JAEA. It would be helpful to explain where responsibilities lie, e.g. who is in charge of approaching companies.
- The PR activities for companies are very important. We strongly recommend continuous outreach activities to industries who might use the facilities.
- For society and policymakers, IAC recommends that diversity and GX (Green Transformation) activities or statements are shown on the web page.
- The number of contents on the top page is small; it would be nice to post more topics. IAC suggests that the website would benefit from rebuilding.

RADIOACTIVE WASTE MANAGEMENT

Findings:

- The responsibilities for radioactive waste are complex, particularly because the responsibility transfers from KEK to JAEA, and from one part of JAEA (J-PARC) to another (NSRI), or eventually to a long term disposal site in Japan should one be made available.
- There is a cost to these transfers, i.e. funding is moved from the J-PARC budget (KEK and JAEA) to the JAEA budget (NSRI). It is not clear what this cost is, and it appears that the necessary budget is not secured.
- With the construction of the RAM building there is not a short term issue for storage space for JAEA high level waste, but there is pressure on space for storage of smaller volumes of KEK high level waste. Potential transfer of KEK waste to JAEA (J-PARC) has not been agreed.

Recommendations:

- The IAC strongly recommends that J-PARC clarifies the expected cost, volume and activity of waste transfers to NSRI and seeks the necessary funding. The total funding required will not decrease and it will therefore be easier to deal with on an ongoing (annual) basis. Otherwise there is a risk that it could in future have a negative impact on the J-PARC operational programme.
- There does not appear to be any option where responsibility for KEK waste does not at some point transfer to JAEA (except for some small amounts disposed of through the Japan RI Association commercial route). The IAC therefore recommends that the procedures and costs for transfer from KEK to JAEA are agreed.
- The one area where the funding requirement might decrease is in disposal of some high volume lower level waste, where the activity decreases after a number of years of storage. IAC recommends that J-PARC explores the opportunities for this, including what re-characterisation might be required, since it could be relevant to the processes chosen for volume reduction or decisions to bury or recycle waste.

ACCELERATOR SYSTEMS

Findings:

- Since the IAC meeting in 2022, the J-PARC accelerator team has delivered high-quality beams to the MLF and completed the installation of major power supply upgrades in the MR. The RCS has operated regularly, achieving record 800+ kW beam power to the MLF with high availability. The MR was being upgraded for most of the year, during which short periods of commissioning and beam studies occurred. Commissioning the new, very large magnet power supply system has required quick action to address issues.
 - The RCS has remained in stable user operation, delivering 730 – 830 kW beam to the MLF during the periods January to June and November to February. Availability to the MLF has again been excellent, at 95.2%. A high-power test was held 24 – 26 June 2022, but it was not possible to achieve 1 MW operations because of exceptionally high ambient temperatures (> 30°C).
 - The MR power supply upgrade work will reduce the MR cycle time to 1.32 s to achieve > 750 kW. During commissioning there were three specific failures of power supplies, each of which took several days to rectify. The first two power supply failures appear to be well understood and have been satisfactorily resolved. However, the root cause of the third power supply failure has not been fully explained and therefore the J-PARC team think that there is a possibility it could happen again and that there is now a potential spares vulnerability.
- The J-PARC accelerator team has fully addressed the two recommendations from the IAC meeting in 2022 regarding technical issues with the Machine Protection System. The third recommendation on prioritized lists of the accelerator R&D and accelerator improvement projects which J-PARC would like to pursue has been addressed at high level, but there is still some question about what criteria are used by Section Leaders and Division Heads to choose between individual ‘category 1’ projects given limited resources.
- The cost of electricity in Japan has fluctuated in recent years, nearly doubling within the last two years. This unanticipated cost threatened to reduce MLF operation in JFY2022 by 51 days. J-PARC worked to secure additional funds and reduced that impact to 16 days. High electricity prices are poised to reduce operating hours in JFY2023 by more than half, without additional funding.
- J-PARC related projects submitted in response to the call by the Science Council of Japan for “medium- to long-term academic research strategy” include those extending the accelerator capability with high-intensity heavy-ion beams at J-PARC for the study of super-high-density matter, an MLF second target station for innovative developments in neutron and muon science, and an ADS test facility and user facility for nuclear engineering.

Recommendations:

- Secure funding both for improving and upgrading aging and obsolete accelerator equipment and systems and for stocking up adequate critical operational spares. Machine availability of

> 95% in recent years has been remarkable, but this can only be maintained in the long-term by appropriate investment in obsolescence mitigation.

- Communicate with stakeholders in a timely way regarding the plan for reduced beam operations in JFY2023 due to increased electricity prices, with the existing budget. Substantially reducing operating hours may have major impacts on the expectations of the funding agencies, user communities, and other stakeholders. Their early involvement may help improve the running situation for JFY2023.
- Develop a plan for optimizing J-PARC accelerator technical activities in JFY2023 in case extended shutdown time is available after the summer. If the period from summer to the end of JFY2023 has no beam operations, due to the above-mentioned electricity costs and funding limitations, alternative technical plans should be formulated to make the best use of this period with the existing personnel and equipment.
- Work with J-PARC leadership to identify accelerator development initiatives to be aligned with J-PARC's long term missions. Key technology development, resource build up, and prioritized prototyping for major new capability extensions like heavy ion beam technology, superconducting RF for transmutation and accelerator aspects of a second target station usually take more than ten years of strategic planning, intense R&D and focused preparation.

PARTICLE AND NUCLEAR PHYSICS

Findings:

- There has been good progress since the last IAC, in spite of COVID and other challenges.
- J-PARC is commended for its impressive, broad particle & nuclear physics programme.
- Electricity cost and its effect on the operating time of J-PARC is a serious concern
 - Experiments are taking more time and hence resources to collect data.
 - For neutrino experiments, T2K and in the future HyperK, a substantial reduction in accelerator run time will prevent achievement of the physics goals.
- The Instrumentation Technology Development Center is a timely addition to the portfolio.
- It is critical to keep experiments and accelerator construction on schedule as this reduces costs, improves international participation, and delivers timely exciting scientific results (including g-2).
- Delivery of the beam to the COMET experiment is a critical milestone - congratulations.
- The Particle and Nuclear Physics PAC is a critical tool for review and optimization of the program; it works well.
- Many new projects/upgrades are due to start in 2026/27. Is J-PARC capable of doing all of this, in particular considering the available personnel and funding?
- The Hadron Hall extension project is ranked as the top priority in the KEK PIP 2022 plan and should get appropriate support. Proposals need to be prepared for presentation to MEXT.

Recommendations:

- A plan for how to make decisions about beam delivery to different users, including Hadron Hall and neutrino experiments, has to be developed and communicated to all involved.
- Plans for the construction phase of the Hadron Hall extension project should engage the communities of the ongoing and future experiments.
- The committee recommends continued support for the small experiments at the scientific frontiers, including on strangeness and rare decay of kaons, to keep the scientific diversity of the program.
- The contributions to experiments outside of J-PARC are valuable and should be continued.

MATERIALS AND LIFE SCIENCE - NEUTRONS

Findings:

- The operating hours of the facility may be significantly limited in 2023 due to increasing energy costs. Every effort should be made to secure additional funding or repurpose other funding to allow additional operating days. The small number of operating days that is currently expected would be quite detrimental to the MLF's many efforts to expand the vibrant neutron scattering community in Japan.
- Reliability has been excellent with availability over 95% at power levels approaching maximum design performance. Congratulations on this impressive technical and operational achievement. This great success is due in part to the wise decision to prioritize stable operations and increasing neutron production hours to support growth in number of experiments and scientific productivity. Thus the IAC believes that the MLF should continue the careful, systematic power ramp-up as it nears 1 MW operations.
- The IAC notes that, at some point, the decision must be made to operate the target for two years rather than one. This change will not only reduce operating costs due to needing fewer targets, but will also reduce the amount of radioactive waste generated. However, this will entail additional risk of target failure which would be very disruptive to the scientific programs being undertaken at the MLF. Thus, we agree with a cautious approach to making this change and to carefully consider the timing of this decision with respect to power ramp-up.
- The IAC continues to strongly believe that all users should have a similar scientific experience at the MLF regardless of the instrument "owner". We applaud efforts to harmonize instrument operations across the MLF, but believe much more could be done in this regard.
- J-PARC is rich in top-class instruments, with the potential to produce high-impact science. The visibility of J-PARC will be greatly enhanced if this potential is fully realized. The IAC believes that staff should be encouraged and rewarded to engage in outreach and collaborations with top scientists.
- At any neutron facility, the number of users is limited by the number and types of instruments. The MLF is nearly fully instrumented and the instruments are all fully subscribed. Thus the IAC believes that increasing the number of users is not possible. Rather the emphasis should be on fully realizing the scientific potential of the current instrument suite.
- The number of publications still seems to be increasing and the yield rate of 50% is similar to that at other neutron facilities. The IAC applauds the effort to undertake a more granular analysis of the publication rate on particular classes of instruments which showed that SANS is out-performing other techniques, such as inelastic scattering and powder diffraction. Now the MLF should work towards understanding the reason for this discrepancy in order to institute measures to duplicate the success of the higher performing instruments. We note that one possibility for this difference is the diverse approaches to staffing employed on the various instruments. We also suggest that the results of this analysis be reported in detail to the NAC to get their input.

- The proportion of beam time allocated to industry is very strong and iMateria operates what is likely the best industrial outreach program in the world. The IAC suggests that the MLF carefully consider the reasons for its success in order to promulgate some of its practices across the facility. The IAC also applauds the creation of the Industrial Users Society for Neutron Application (IUSNA) that is coordinated by CROSS and has a good number of companies across several industrial sectors represented.
- Approximately 40% of the neutron experiments at the MLF are led by internationally-based scientists indicating that J-PARC enjoys an excellent reputation across the world. However, half of the overseas usage is from China. This demand is likely to continue until China commissions many additional neutron instruments at its own facilities. Thus, it may be necessary to consider the balance between international and national demand in order to continue expanding the vibrant Japanese neutron scattering community.
- The IAC applauds the creation of J-JOIN. The united proposal platform for JRR-3 and MLF is an excellent start to what we believe should become a deep collaboration between these facilities. While we are not sure of the value of the consulting service that J-JOIN provides, the IAC believes MLF should actively seek other opportunities for collaboration in areas such as sample environment, technique development, sample preparation and characterization, data reduction and analysis, *etc.*
- Apparently, it is the policy of the MLF that if the results from a proposal are not published within three years of the experiment that the user must pay for the beam time. This policy, if it is actually enforced, reduces the incentive to propose truly innovative experiments as these often fail, motivates users to produce poor quality papers that damage the reputation of J-PARC, and deters potential users, particularly new users, from applying for time. It is also inconsistent with generally accepted international practice. Thus, the IAC recommends that the MLF abandon this counter productive policy.

Recommendations:

- MLF should continue the careful, systematic power ramp-up as it nears 1 MW operations. Reliable operation is the highest priority, particularly if operating time is reduced.
- MLF emphasis should now be on fully realizing the scientific potential of the current instrument suite, not on increasing the number of users.
- The results of any analysis of publication statistics should be reported in detail to the NAC to get their input.
- MLF should carefully consider the reasons for the success of the iMATERIA industry programme in order to promulgate some of its practices across the facility.
- If operating time is reduced, it may be necessary to consider the balance between international and national demand in order to maintain the vibrant Japanese neutron scattering community. If international users tend to rely upon remote rather than in-person operation, adding burden to the supporting staff, priority could be given to in-person international users.
- MLF should actively seek all opportunities for collaboration with JRR-3.

- The IAC strongly recommends that MLF does not implement any policy to charge users (except for proprietary use by industry). However, opportunities for collaborative projects/activities with users that help to bring additional funding/personnel to MLF should be pursued.

MATERIALS AND LIFE SCIENCE – MUSE

Findings:

- IAC acknowledges the good progress in all areas of MUSE activities, from R&D, organization of MUSE operation, outreach activities to staffing policies including the transition to a younger generation of personnel.
- IAC is pleased to see press releases and awards related to MUSE experiments and acknowledges the outstanding work of the MUSE team.
- IAC congratulates the MUSE team for the selection of the Transmission Muon Microscope (T μ M) in the KEK Project Implementation Plan (PIP).
- IAC applauds the efforts to finish the first spare muon target in 2023, providing a 10-year strategy for used target storage, and the planning for the next spare targets.
- H-line commissioning was successfully started. The DeeMe experiment needs urgent repair of the power supply of the capture solenoid, while the experimental setups of DeeMe, MuHFS, and g-2 are making very good progress.
- Commissioning of the U-line is making good progress to prepare for the μ SR user program in U1A with ultra-slow muons (USM).
- The laser program for the generation of USM made a significant step forward by increasing the pulse energy of Lyman- α by a factor 3. A new pumping scheme looks promising to achieve the required 100 μ J per pulse. In parallel, the option of using the muonium 1s-2s transition for USM generation is being pursued.
- The negative muon program continues to show impressive results.
- IAC is concerned that there is still insufficient manpower for a sustainable operation of MUSE as a user facility, and hence to fully exploit the rich scientific opportunities.

Recommendations:

- IAC recommends that MUSE management continue to make available additional staff with part of their duties assigned to the ‘instrument scientist’ role. IAC has seen good progress through new collaborations with JAEA and KEK-IPNS.
- IAC recommends to continue efforts to manage – on the medium term – the safety aspects of delivery of the proton beam from the accelerator to the muon and neutron targets through a J-PARC-wide group with the expertise and capabilities to deal with this issue in a uniform site-wide manner.
- IAC recommends the continuation of collaborations with local J-PARC neutron sample environment groups, and with the international muon facilities.
- IAC recommends that MUSE pursues the new pulse scheme for Lyman- α laser ionization of muonium, and ionization through the 1s-2s transition as an alternative route. After a stable rate of 1000/s USM has been established in U1A (allowing to start the USM mSR program), IAC recommends to prioritize efforts on the laser development in the H2 beamline for g-2/EDM.

- IAC recommends starting the feasibility study of TmM in U1B with high priority, and to define the requirements based on scientific objectives from potential users of TmM from device and life sciences.
- IAC recommends to repair the power supply of the capture solenoid of the H-line with high priority to allow DeeMe to begin physics data taking.
- IAC strongly supports the continuation of outreach activities that represent an important investment in the long term future of the facility.
- IAC recommends that MUSE draws up a long-term vision for the further development of the facility and develops career plans for the next generation of scientists.

ADS

Findings:

- Construction of commercial ADS will require a great deal of budget, and is therefore positioned as a top-down project in consideration of the entire nuclear energy use in Japan. The social needs for the development and realization of ADS are recognized. The individual elemental technologies required include the development of a highly reliable and safe target system (TEF-T), a nuclear fuel and sub-critical reactor core using minor actinides (TEF-P), and the development and construction of an accelerator for ADS that is different from the current J-PARC accelerator. It is also necessary to demonstrate that an ADS facility can be constructed and operated safely.
- It is not possible to develop all of the elemental technologies through J-PARC research activities alone, so it is necessary to work together in the framework of international joint research collaborations such as MYRRA. J-PARC researchers and support staff could be organised to support bottom-up proposals for ADS activities that attract universities and other research institutions, thereby increasing the total level of effort available.
- Corrosion-resistance research on target window materials in a LBE environment in JAEA is progressing steadily. Activities such as workshops aimed at the progress of TEF-T research are useful, and it is necessary to continue in the future.
- The proposal for a new TEF-T research facility would be supported through new applications of J-PARC's high-energy proton beams in the medical and engineering fields. These include irradiation of fission reactor and fusion reactor materials, the production of medical radioisotopes using new beam lines, and a neutron radiation port for testing the application of semiconductors in space. These are also expected to contribute to the promotion of joint research with companies.
- The accelerator technology required for ADS is very different from existing J-PARC accelerator technology. While J-PARC accelerators operate at low duty cycle at room temperature, ADS accelerators are designed to run in continuous-wave mode at superconducting temperature with extremely high reliability.

Recommendations:

- Due to the current budget difficulties it is unlikely that construction of new ADS facilities will start soon, but J-PARC should nevertheless continue to press for a top-down decision from the Japanese government to start the the TEF-T project.
- The realization of an ADS system will take a long time because it requires steady technology development and the accumulation of results. It is, therefore, important to maintain the current research system, secure the skills needed for future facility construction, develop

researchers, and deepen cooperation with domestic and foreign universities and research institutions.

- An R&D program with clearly identified objectives, desired schedule, and adequate resource will be needed to bring accelerator technologies to maturity for ADS.

Appendix I

Agenda for the International Advisory Committee Meeting of J-PARC

24 Feb-25 Feb 2023, AYA'S LABORATORY Quantum Beam Research Center (AQBRC).

Friday 24 February 2023

Session: J-PARC Tour

Time and Place: (09:30-12:00)

Break: Lunch

Session: Charge to the Committee / Report from the Director

Time and Place: 2F Conference Room (13:30-14:20)

Session: Accelerator

Time and Place: 2F Conference Room (14:20-15:05)

Break: Coffee

Session: Material and Life Science I

Time and Place: 2F Conference Room (15:15-16:00)

Session: Material and Life Science II

Time and Place: 2F Conference Room (16:00-16:45)

Session: Executive Session (closed)

Time and Place: 2F Conference Room (16:45-17:15)

Break: Group Photo

Session: Views from Funding Agency and Host Institutes

Time and Place: 2F Conference Room (17:25-18:25)

Session: Banquet

Time and Place: AQBRC (19:00-21:00)

Saturday 25 February 2023

Session: Particle and Nuclear Physics

Time and Place: 2F Conference Room (08:30-09:10)

Break: Coffee

Session: Parallel Sessions

Time and Place: (09:15-10:45)

Session: **【Material and Life Science】 【Accelerator Driven Transmutation Research】**

Time and Place: 2F Conference Room (09:15-10:45)

Session: 【Particle and Nuclear Physics】 【Accelerator】

Time and Place: 1F Conference Room (09:15-10:45)

Break: Coffee

Session: Accelerator Driven Transmutation Research

Time and Place: 2F Conference Room (10:55-11:20)

Session: Public affairs and communications

Time and Place: 2F Conference Room (11:20-11:35)

Session: Safety

Time and Place: 2F Conference Room (11:35-12:00)

Break: Lunch

Session: Radioactive Waste Management

Time and Place: 2F Conference Room (12:45-13:05)

Break: Coffee

Session: Executive Session (closed)

Time and Place: 2F Conference Room (13:15-15:05)

Session: Close out

Time and Place: 2F Conference Room (15:05-15:35)

Appendix II

IAC Committee members for 2023

In person:

Angela BRACCO
Dmitri DENISOV
Takeshi EGAMI
Akira HASEGAWA
Shinichi KAMEI
Paul LANGAN
Robert McGREEVY
Joachim MNICH
Dan Alan NEUMANN
Thomas PROKSCHA
Yoko SUGAWARA
John THOMASON
Jie WEI

Remote:

Hamid Aït ABDERRAHIM
Reiner KRUECKEN
Hiromi YOKOYAMA

Appendix III

Charges to IAC2023 from J-PARC by T. Kobayashi, director

- Evaluate overall performance of J-PARC Center
 - Promotion of science with safety
 - Each facility should have a good balance of user program and facility improvements
 - Future vision of the facility
- Review safety activities at J-PARC
 - Safety culture is well penetrated thru staff and users?
- Any suggestions to improve the total performance are welcome. Our concerns include but are not limited to
 - Public relations
 - Open access for users
 - More uniform operation combining KEK, JAEA, and CROSS efforts is critical to further success of MLF