

Minutes of the 109th Machine-Time Committee Meeting

Date and time: April 18, 2017; 15:00–16:40

Place: RIBF Bldg., Room 203

Attendees: Sakai^a(Chair), En'yo^{a,†}, Miyatake^{c,†}, Fukunishi^a, Kamigaito^a, Kase^a, Wada^c, Morimoto^a, Yako^b,
Okuno^a, Ueno^a, Uesaka^a, Uwamino^a, Wakasugi^a, K. Yoshida^a, Yamaguchi^b, Isobe^{d,†}, Haba^{a,†},
A. Yoshida^{a,†}, Otsu^{a,†}, Tanaka^{a,†}, Nishimura^{a,†}, Yoneda^a

Absent: Shimoura^{b,†}, Abe^a, Sakurai^a, Morita^{a,†}, Motobayashi^{a,†}, Mabuchi^{a,†}

^aRNC / ^bCNS / ^cKEK / ^dRIBF-UEC / [†]Observer
(in random order)

Reports

1. Current Status of Machine Time Operation (Yoneda)

The current status of the machine time operation was reported. After the last MT committee meeting, a new isotope search experiment was performed with ⁴⁸Ca in SRC-BigRIPS. After that the primary beam was switched to ⁷⁰Zn, and a SAMURAI experiment was performed. Now the machine time is suspended due to accelerator troubles. A decision will be made if the machine time resumes with the present experiment or the next experiment. In the low-energy facility, RILAC-standalone measurements are ongoing for the superheavy element search with 6 beam species.

2. Report on Machine Time Schedule Change (Yoneda)

The change of the machine time schedule was reported. NP1412-RIBF134-01(Wimmer), NP1512-RIBF142-01(Steppenbeck) were cancelled due to accelerator troubles. The switch date of RILAC standalone Morita long run was changed from April 10 to 9am, April 22. NP1512-RRC41-02(Hirayama, 3/18 9am-3/20 9am) was extended for 3 hours to complete the measurement.

3. Report on the RIBF Accelerator Operation (Fukunishi)

A status report was made concerning the accelerator operation. The ⁴⁸Ca beam was provided from March 27 9pm to April 2, 9am. The beam delivery was smooth and the availability was 125% including 1.5 days of earlier start of the beam delivery. The beam intensity was supposed to be about 450-600pA. After that the ⁷⁰Zn beam was provided from 9am, April 7. The maximum beam intensity reached so far was 193pA. Due to accelerator troubles such as vacuum leakage at bellows in the SRC injection line caused by the beam hit the beam pipe, the availability so far is 41.4%. A serious trouble occurred at the ion source (vacuum leakage) around 2:30pm on April 15, and the accelerator operation is suspended.

4. Report on BigRIPS Operation (K. Yoshida)

A report was made concerning the BigRIPS operation. Secondary beams of neutron-rich Na-Si isotopes were provided to DA-16 (spokesperson: Ahn) with the ⁴⁸Ca primary beam. Then secondary beams of Ca isotopes were provided to NP1312-SAMURAI9R1 (spokespersons: Kobayashi, Togano) with the ⁷⁰Zn primary beam. The operation was smooth, without any serious trouble.

5. Report on Superheavy Element Search Plan (Morimoto)

A report was made concerning the experiment plan for the next superheavy element search. The ^{248}Cm material was processed so that it can be used as a target. The first step is to measure the barrier distribution with several beam species around Na and Si. After that long runs will start for the next superheavy elements. The amount of ^{248}Cm material available for now is limited, and it will be an important decision to select the reaction channel to be used first. Ion source development is needed if ^{50}Ti beam is used at RILAC2+RRC. The Nishina Center Director suggested to make a final plan through careful discussions in the experiment group.

6. Report on RILAC construction work plan (Kase)

A report was made concerning the plan of the RILAC construction work. GARIS2 will move to E5, and CMS which changes beam energies will move to the D-room. The on-site work company will be decided, and then the details of the schedule will be fixed. The work to carry out GARIS2 from the RILAC large irradiation room is expected to start in the latter half of June.

7. Report on BRIKEN Parasite Experiment (Nishimura)

A report was made concerning the BRIKEN parasite experiment. A beta-decay measurement was made for 3.5 days from March 25, using particles that reached ZDS during the new isotope search experiment in BigRIPS. Details are being analyzed. but it is anticipated that the data set includes new data for Ne-Si region neutron-rich isotopes.

8. Report on Industrial Use Machine Study (A.Yoshida)

A report was made concerning the machine study for measurements of industrial use. Supposing the cases of industrial uses of ^{136}Xe beam (39MeV/u) and ^{197}Au beam(18.4MeV/u) at E5A, the possibility of beam energy tuning and beam spread with wobbler and scattering foils were checked. It was confirmed that both are possible. The Xe beam has the range of longer than 100 μm , and thus can be used in the semiconductor tests and so on, as were done with other beams so far. The Au beam energy is low, and can be used to take data at a single energy point with a large LET.

9. Status of PAC Meetings (Yoneda)

- 18th NP-PAC: (12/7 - 9)

From the next NP-PAC,

The number of pages is limited up to 10 pages (appendices can be attached).

The presentation time is 10 minutes, and no extension is allowed

(documents for responses to the PAC comments are accepted).

- 14th ML-PAC: To be held on July 3 and 4.

- 6th In-PAC: Held on January 13. The next schedule is not fixed yet.

Topics discussed

1. Approval of Minutes of Previous Meeting (Sakai)

1.

FY2017 MT Schedule (Yoneda)

A summary of the MT schedule that is supposed to be in fiscal year 2017 was shown by the user liaison, and opinions were collected. The spring SRC-BigRIPS campaign will be arranged with ^{48}Ca , ^{70}Zn , ^{238}U , ^{18}O beams until mid-July. With the ImPACT experiment with ^{238}U and one more beam, the total operation will reach 5 months roughly. The ImPACT experiment plan is to perform 6.5-day experiment, and after 3-4 days of break another 5-day experiment is performed. The 3-4 days of break may fit the BRIKEN experiment, concerning the availability of the beam species and beam port. The situation that the operation dates may be limited with the operation budget does not change. There were no particular opinion given by the members.

2. Next Meetings

- The next meeting will be held on Tuesday, May 16, 2017, at 3pm.
- The meeting after the next will be held on Tuesday, June 20, 2017, at 3pm.