

IV. User Program and Statistics

IV-1. Program Overview

JASRI calls for public use proposals twice a year. The submitted proposals are reviewed by the Proposal Review Committee (PRC). As for General Proposals, 659 proposals out of 1163 submitted proposals were approved in the research term 2008B, and 654 out of 979 proposals were approved in 2009A. Since the start of the Long-term Program in 2000B, 24 Long-term Proposals have been implemented. Two new proposals were approved in 2009A, and 8 and 9 proposals were carried out in 2008B and 2009A, respectively. In 2008B and 2009A, Nanotechnology Support Proposals, Industrial Application Proposals, Medical Bio Trial Use Proposals and Medical Bio EX Proposals were called for as Priority Field Proposals. Out of 314 submitted proposals, 166 proposals were approved in 2008B, and 172 out of 254 proposals were approved in 2009A. The proposal statistics are shown in Table IV for the period from 1997B to 2009A; Power User Proposals and JASRI Proposals are excluded. During the period from 2003B to 2009A, 17 user groups were designated as Power User groups (PUs), which include six PUs active in 2009A. To date, a total of 2763 shifts have been used by PUs, of which 537 shifts were spent from 2008B to 2009A.

SPring-8 consistently provided 1,879 hours of user beamtime in 2008B and 1,927 hours in 2009A. Since the start of operation in 1997, SPring-8 has succeeded in providing users with a total beamtime of 44,925 hours. In 2008B, 889 experiments were conducted by 5,955 users at public and contract

beamlines, and 907 experiments by 6,001 users in 2009A. From the start of operation in 1997 to 2009A, a total of 15,347 experiments were conducted by 103,286 users. It was on the 5th of June 2009 that the total number of user visits to SPring-8 reached 100,000.

The beamtime available to the users, the number of experiments conducted, and the number of user visits at the public and contract beamlines are summarized in Table V and in Fig. 3.

Figure 4 shows the breakdown of the approved proposals sorted by user affiliation and of the number of experiments conducted at the public and contract beamlines from 1997B to 2009A. The percentages of experiments conducted by users from abroad were 5.7% in 2008B and 6.1% in 2009A.

Since SPring-8 is a public facility widely open not only to academia but also to industrial sectors, JASRI established the Industrial Application Division in 2005. The division's coordinators specializing in the fields of SR industrial applications are available for consultation with new users. Currently, Industrial Application Proposals account for approximately 20% of the total number of proposals conducted at the public beamlines. From 2007B, SPring-8 has introduced the SPring-8 Measurement Service, in which the personnel of the Industrial Application Division can carry out XAFS measurements on behalf of users at BL14B2. SPring-8 has expanded the measurement service to Mail-in Protein Crystallography Data Collection at BL38B1 and powder X-ray diffraction at BL19B2 since 2009B.

Table IV. Numbers of submitted proposals and approved proposals in each research term

Research Term	Beamtime available to users at each beamline	Submission deadline	Number of submitted proposals	Number of approved proposals
1997B: 1997.10 - 1998.03	168	1997.1.10	198	134
1998A: 1998.04 - 1998.10	204	1998.1.6	305	229
1999A: 1998.11 - 1999.06	250	1998.7.12	392	258
1999B: 1999.09 - 1999.12	140	1999.6.19	431	246
2000A: 2000.02 - 2000.06	204	1999.10.16	424	326
2000B: 2000.10 - 2001.01	156	2000.6.17	582	380
2001A: 2001.02 - 2001.06	238	2000.10.21	502	409
2001B: 2001.09 - 2002.02	190	2001.5.26	619	457
2002A: 2002.02 - 2002.07	226	2001.10.27	643	520
2002B: 2002.09 - 2003.02	190	2002.6.3	751	472
2003A: 2003.02 - 2003.07	228	2002.10.28	733	563
2003B: 2003.09 - 2004.02	202	2003.6.16	938	621
2004A: 2004.02 - 2004.07	211	2003.11.4	772	595
2004B: 2004.09 - 2004.12	203	2004.6.9	886	562
2005A: 2005.04 - 2005.08	188	2005.1.5	878	547
2005B: 2005.09 - 2005.12	182	2005.6.7	973	624
2006A: 2006.03 - 2006.07	220	2005.11.15	916	699
2006B: 2006.09 - 2006.12	159	2006.5.25	867	555
2007A: 2007.03 - 2007.07	246	2006.11.16	1099	761
2007B: 2007.09 - 2008.02	216	2007.6.7	1007	721
2008A: 2008.04 - 2008.07	225	2007.12.13	1009	749
2008B: 2008.10 - 2009.03	189	2008.6.26	1163	659
2009A: 2009.04 - 2009.07	195	2009.12.11	979	654

Table V. SPring-8 user operation results

Research Term	User Time (hours)	Public BL		Contract BL	
		Experiments	Users	Experiments	Users
1997B: 1997.10 - 1998.03	1,286	94	681	—	—
1998A: 1998.04 - 1998.10	1,702	234	1,252	7	—
1999A: 1998.11 - 1999.06	2,585	274	1,542	33	467
1999B: 1999.09 - 1999.12	1,371	242	1,631	65	427
2000A: 2000.02 - 2000.06	2,051	365	2,486	100	794
2000B: 2000.10 - 2001.01	1,522	383	2,370	88	620
2001A: 2001.02 - 2001.06	2,313	474	2,915	102	766
2001B: 2001.09 - 2002.02	1,867	488	3,277	114	977
2002A: 2002.02 - 2002.07	2,093	545	3,246	110	1,043
2002B: 2002.09 - 2003.02	1,867	540	3,508	142	1,046
2003A: 2003.02 - 2003.07	2,246	634	3,777	164	1,347
2003B: 2003.09 - 2004.02	1,844	549	3,428	154	1,264
2004A: 2004.02 - 2004.07	2,095	569	3,756	161	1,269
2004B: 2004.09 - 2004.12	1,971	555	3,546	146	1,154
2005A: 2005.04 - 2005.08	1,880	560	3,741	146	1,185
2005B: 2005.09 - 2005.12	1,818	620	4,032	187	1,379
2006A: 2006.03 - 2006.07	2,202	724	4,809	226	1,831
2006B: 2006.09 - 2006.12	1,587	550	3,513	199	1,487
2007A: 2007.03 - 2007.07	2,448	781	4,999	260	2,282
2007B: 2007.09 - 2008.02	2,140	739	4,814	226	1,938
2008A: 2008.04 - 2008.07	2,231	769	4,840	232	1,891
2008B: 2008.10 - 2009.03	1,879	672	4,325	217	1,630
2009A: 2009.04 - 2009.07	1,927	669	4,240	238	1,761
	44,925	12,030	76,728	3,317	26,558

Note: The numbers of long-term proposals are counted by beamline, that is, if two beamlines were used for one experiment, those are counted as two experiments.

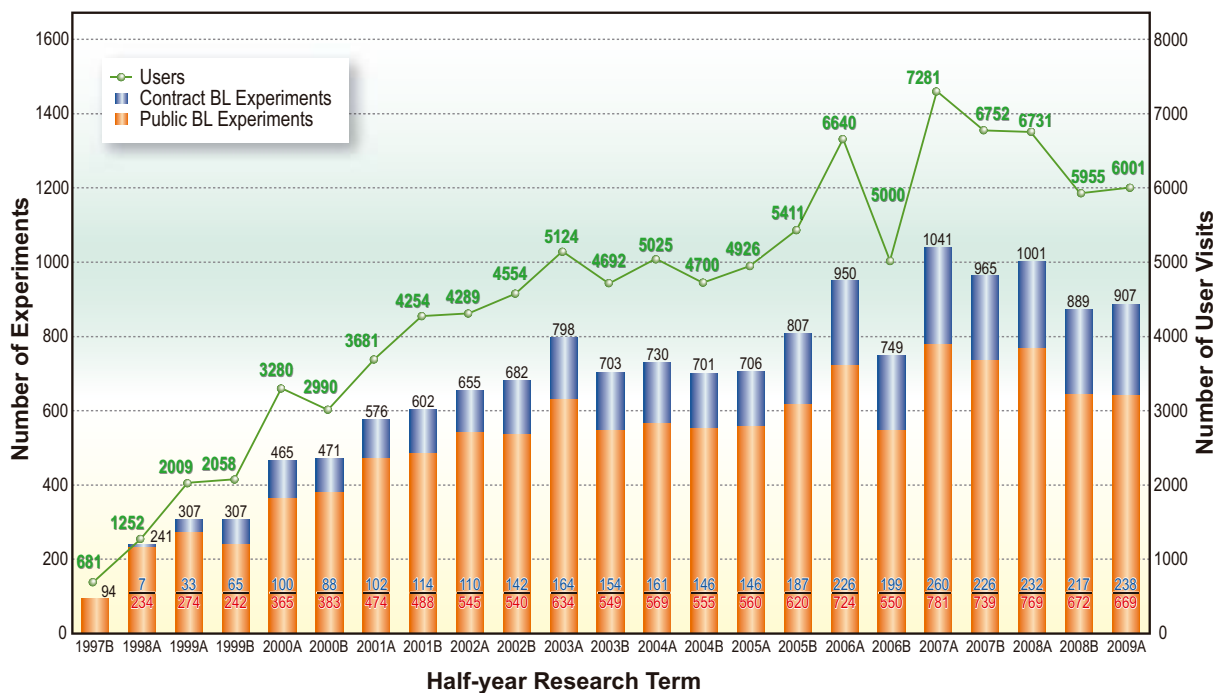


Fig. 3. Numbers of user visits and conducted experiments.

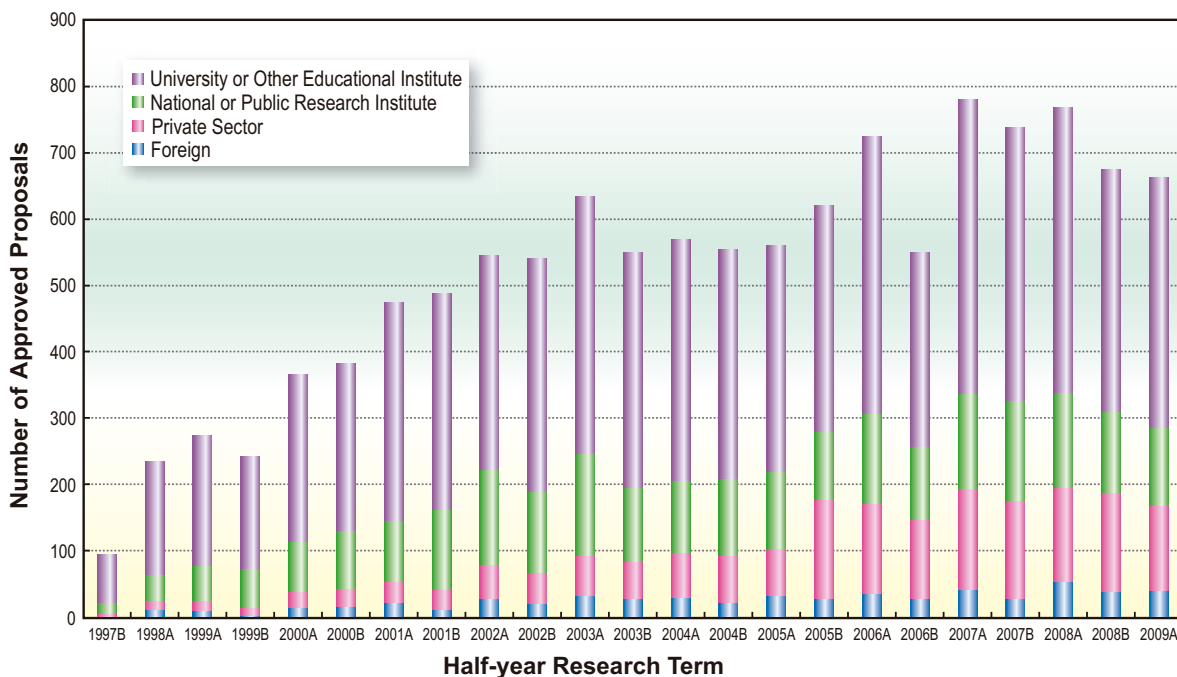


Fig. 4. Number of approved proposals by affiliation of applicants (public beamlines).

IV-2. Types of Research

(Proprietary Research and Non-Proprietary Research)

With respect to the handling of research results obtained by using SPring-8, there are two types of research at SPring-8, namely, proprietary research and non-proprietary research. For research to be considered non-proprietary, users must submit the SPring-8 Experiment Report within 60 days of the completion of each experiment to make the results available to the public. Users can use beamlines free of charge if their research is non-proprietary. As for proprietary research, the research proposals are reviewed only from the viewpoint of feasibility, safety, sociality, and ethics. In this type of research, users are charged a beamtime fee of 480,000 yen/shift based on cost recovery for SPring-8 beamline operation. In return, SPring-8 Experiment Reports need not be submitted.

IV-3. Types of Proposals

A. General Research Program

(i) General Proposal

JASRI calls for General Proposals twice a year. Once approved, the validity of each proposal is six months. Up to 10% of the total beamtime is allocated to proprietary proposals.

(ii) Long-term Proposal

Beamtime is reserved for Long-term Proposals for three years in order to promote research expected (a) to produce outstanding results in the field of science and technology, (b) to establish a new research field or experimental method, and (c) to significantly improve industrial base technology by fully utilizing the characteristics of SPring-8. The call for Long-term Proposals and the review process take place twice a year prior to those for General Proposals. For this type of proposal, proprietary research is not available. The review process consists of two steps: application forms are reviewed initially and applicants who meet certain criteria will proceed to the interview.

(iii) Urgent Proposal

This system is designed for users with urgent needs to conduct experiments of great scientific significance. The PRC reviews the submitted proposals on a rolling basis and promptly determines whether to approve or reject them.

(iv) Budding Researchers Support Proposal

The Budding Researchers Support Program is intended to encourage doctoral students with an

exploratory and original research proposal or research theme that is expected to contribute to the development of synchrotron radiation research. Under this program, successful applicants will be provided with domestic travel and lodging expenses. At the time of the experiment at SPring-8, applicants must be doctoral students who show initiative, can work independently, and are self-reliant when conducting research at SPring-8. All applicants are required to obtain permission to apply from their Ph.D. adviser, who must be included as a project team member.

(v) Non-proprietary Grant-aided Proposal

The Non-proprietary Grant-aided Program is intended for research proposals that have been reviewed and approved for a large research grant available in Japan. Under this program, the proposals are exempt from a scientific review process, and only the feasibility and safety of the experiment are considered. These proposals are given priority consideration for up to 5% of the entire user beamtime and 20% of the user beamtime for each beamline. However, users are required to pay a program fee of 131,000 yen/shift.

(vi) Time-designated Proposal

The time-designated use is intended for users wishing to conduct proprietary research in a particular time period. Submitted proposals are promptly reviewed through a simplified process. Users are charged a beamtime fee of 720,000 yen/shift for proprietary use (incl. 50% premium).

(vii) SPring-8 Measurement Service

The staff of JASRI perform measurements on behalf of users, and users can choose whether to come to SPring-8 and be present during the measurements or to simply send their samples to SPring-8. The service is intended to provide convenience for companies and research institutes that find it difficult to retain specialized staff and to accommodate the need for quick access. Application for the service is considered a proprietary proposal and is subject to the proprietary beamtime and user fees applicable to Time-designated Proposals (calculated in two-hour increments).

B. Priority Research Program

The Priority Research Program is categorized into the following two types: the priority field type and the priority user type. For the priority field type, JASRI designates research fields of strategic importance.

For the priority user type, eligible candidates, who are highly familiar with the public beamlines and their methodological approaches, and who are expected to deepen the academic fields of SR science and technology, are designated as power users. JASRI has been providing active support for this program to produce a number of high-quality results.

B-1) Priority Field Type

Currently, the following three types of research are designated under the priority field type:

(i) Nanotechnology Support Proposal (period of designation: FY2007-FY2011)

On the basis of the achievements gained through the Nanotechnology Support Project (a national project from FY2002 to FY2006), the research field of nanotechnology and nanomaterials has been designated as the priority field. The purpose of this system is to support research in the field of nanotechnology and nanomaterials for innovation creation in 5-10 years time.

(ii) Industrial Application Proposal (period of designation: FY2007-FY2011)

This field is aimed at promoting the expansion of industrial application fields by attracting new users, developing a basic technology through the industry academia-government cooperation, and promoting projects whose achievements contribute to companies and society. JASRI provides intensive support in the categories of “new users,” “new area,” “industrial base consortium,” and “advanced technology development.” To meet the needs of industrial users, JASRI calls for Industrial Application Proposals four times a year for the three public beamlines (BL14B2, BL19B2 and BL46XU) dedicated to industrial applications.

(iii) Medical Bio Trial Use Proposal and Medical Bio EX Proposal (period of designation: FY2006-FY2009)

Aiming at establishing new experimental methods in the medical bio field, there are two types of proposal in this field: Medical Bio Trial Use Proposal and Medical Bio EX Proposal. The Medical Bio Trial Use Proposal is intended for the promotion of beamline use by new users, who seek to develop and establish a new approach to solving problems at the forefront of medical biology research. The Medical Bio EX Proposal, which is an expanded and developed form of the Medical Bio Trial Use Proposal, is designed for research aimed at discovering the causes of major diseases and to develop their diagnostic and treatment methods. This program was successfully finished at the end of FY2009.

B-2) Priority User Type

(i) Power User Proposal

Power User Proposals are non-proprietary proposals designed for designated power user groups (PUs) to produce outstanding results in the field of pioneering use of SR using up to 20% of the beamtime allocated to beamlines accepting PUs. The power user designation period is five years. PUs are subject to an interim review of research achievements, equipment development, and user support by the Power User Review Committee at the end of the third year to determine whether to continue or discontinue the power user status. When the designation period is completed, a post implementation review is conducted by the Committee. JASRI invites applications for power user positions once a year, which takes place before the proposal calls for research term A.

IV-4. Beamtime Allocation

The beamtime allocation of public beamlines is arranged in such that more than 50% of the total beamtime is allocated to public use proposals (proposals that are submitted in response to calls for proposals and approved by the PRC), while up to 20% is allocated to JASRI's own research proposals. The remaining beamtime is used for seminars, trainings, setup/removal and adjustment of equipment for user experiments, and proposals with special needs and requirements (Urgent, Time-designated, and Power User Proposals). The conceptual scheme of the beamtime allocation at the public beamlines is shown in Fig. 5.

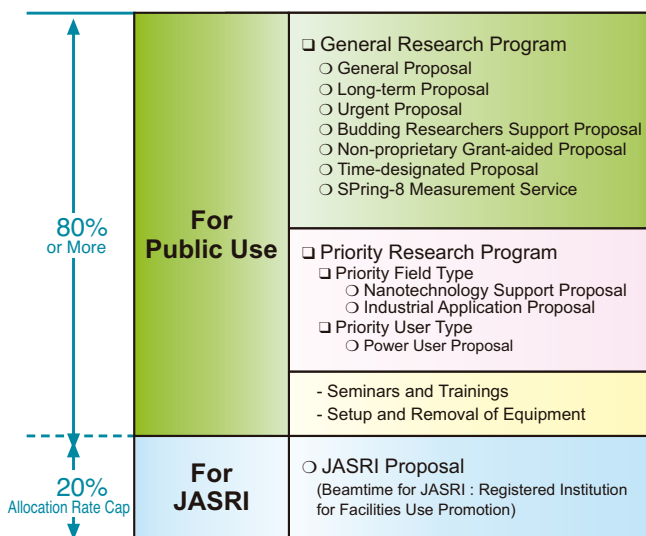


Fig. 5. Conceptual scheme of beamtime allocation at public beamlines.