

Preface

This annual report summarizes the activities at SPring-8 during calendar year 1998. It covers status reports of accelerators, experimental facilities, safety and utility management, and results of R&D on accelerator and beamline technology. Results of the experiments by synchrotron radiation are summarized elsewhere.

This was the first full year of facility operations at SPring-8 in the user service mode since the dedication ceremony in October 1997. The first period from October to the end of March 1998 was mainly dedicated to tuning up the twelve beamlines and proving their performance through trial experiments carried out by in-house staff in collaboration with outside users. In this period the storage ring was operated for 1,956 hours, and 65.7 % of the beamtime was used for the trial experiments.

The facility operation was very stable throughout the second period from April to October 1998 as well as the third period from November 1998. In the second period, fifteen beamlines were opened to outside users and beam time was allocated to 229 proposals. In October 1998, one more beamline became available to users and beam time was allocated to 258 proposals in the third period.

The performance characteristics of the storage ring such as orbit stability, emittance, coupling, stored current, and its life have been studied, and it became clear that the present ring already exceeds the design values of almost all of the performance specifications.

The facility was continuously operated in two- or three-weeks mode as one cycle and was shut-down in July and August for the construction of new beamlines. The total operation time of the storage ring in 1998 was 4,190 hours, and 2,624 hours (62.6 %) were used for user experiments. The remaining 1,456 hours were spent in tuning and study of accelerators and in commissioning of new beamlines. It should be stressed that the down time due to failures was only 110 hours, or 2.6 % of the total operation time. The maximum current was increased from 20 mA to 100 mA (designed value) in May 1998.

Construction of nine public and four contract beamlines, including one for the study of nuclear physics by using Compton back-scattered photons, was continued in 1998.



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