

K500 operations and development

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Introduction

During the 2014-2015 reporting period a total of 29 different beams, including 15 newly developed beams, were used for experiments, and there were a total of 37 beam tunings for these experiments. The SEE program and the charge-breeding effort are treated separately in this progress report.

Ion Sources

During the shutdown ECR1 was opened for examination, and it was found that there had been no further deterioration in the damaged spot that had developed over a plasma flute on the aluminum wall.

Cyclotron Beams

New beams of ^{10}B at 31 AMeV, ^{12}C at 2.7 AMeV and 7.0 AMeV, ^{15}N at 7.0 AMeV, ^{16}O at 3.5 AMeV and 40 AMeV, ^{18}O at 40 AMeV, ^{22}Ne at 31 AMeV, ^{24}Mg at 24.0 AMeV, ^{25}Mg at 13 AMeV, ^{31}P at 30 AMeV and ^{36}Ar at 17 AMeV and 36 AMeV, ^{40}Ca at 40 AMeV and ^{44}Ca at 4.9 AMeV were developed for experiments.

Operations

For the period April 1, 2014 through March 31, 2015, the operational time is summarized in Table I, while Table II lists how the scheduled time was divided. A water-leak in a lower dee-stem occurred five days before the December shut-down, which accounted for the bulk of the unscheduled maintenance. Most of the repair for this leak occurred during the shutdown. Scheduled maintenance occurred mainly in the January-February shut-down.

Table I. 2014-2015 operational time.

Time	Hrs.	%Time
Beam on target	6283	71.9
Beam development	722	8.3
Scheduled maintenance	1456	16.7
Unscheduled maint	275	3.1
Total	8736	100.0

Table II. 2014-2015 Scheduled Beam Time.

Time	Hrs.	%Time
Nuclear physics	1469.5	21.0
Nuclear chemistry	1560	22.3
Outside collaboration	0	0.0
Outside users	3253.5	46.4
Beam development	722	10.3
Total	7005	100.0