I
TANDEM

Tandem Operation

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In 1997 the tandem accelerator logged 7905 hours of operation. Operating statistics are shown in fig. 1 and table 1. Accelerating tubes, charging chains and voltage dividing resistors worked witout any failure. Unscheduled maintenance was necessary only for a high voltage tank feedthrough and for the gas stripper mechanism, there was a problem with a bearing in high vacuum.

The electronic part of the terminal stripper gas control unit was replaced because failures ocurred due to insufficient voltage surge protection. Using more modern and smaller microprocessors and ADCs we gained some room for better circuits to protect the input and output lines. The new unit works perfectly.

A two weeks maintenance period for the beam transport system was scheduled in September. The main activities were: service of cooling systems for dipole and quadrupole magnets, modification of some of the beam lines, alignment checks, and installation of control and monitor systems.

The accelerator control system was developed further in the way described in earlier annual reports. The switching magnets in the beam transport system now are field-controlled from a hall probe. More and more experimental instruments are connected to the control system. The latest developments of that kind cover hardware and software for the beam wobbler of the vertical beam line [1] and for the microslits of the microbeam facility [2].

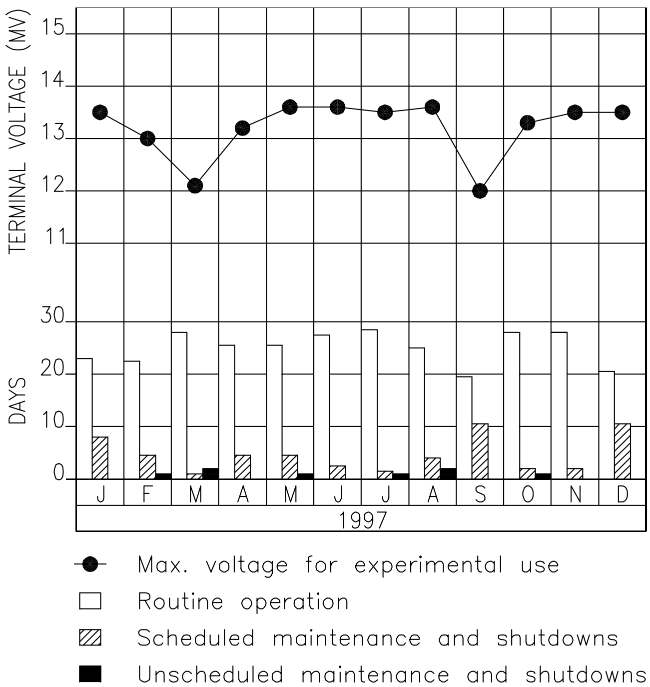

Fig. 1: Operating statistics

ION	^{1}H	^{2}H	$^{1,2}\vec{H}$	^{3,4}He	^{9}Be	^{26}Al	^{32}S	^{36}S	^{31}P	^{36}Cl
PERCENT	11.6	5.0	3.4	2.2	9.2	1.3	4.5	24.4	2.2	1.2
ION	^{40}Ca	^{48}Ti	^{53}Mn	^{56}Fe	^{60}Fe	^{58}Ni	^{63}Ni	^{127,129}J	^{197}Au	others
PERCENT	1.7	3.5	1.2	1.2	2.3	1.2	3.7	11.6	7.4	1.2

Table 1: 1997 ion beam time

References

[1] M. Moosburger *et al.*, this report 110
[2] G. Dollinger *et al.*, this report 106