I
TANDEM

Tandem Operation

L. Beck and L. Rohrer

In 2002 the tandem accelerator was running 300 days for experiments. For maintenance each week 6-8 hours were scheduled. There were two maintenance periods one in February and the other in August. Only a few days for unscheduled tank openenings were necessary due to very reliable operation of the machine. Operating statistics are shown in fig. 1 and table 1. The maximum terminal voltage applied for experiments shown in fig. 1 is not the maximum reachable voltage. Up to a terminal voltage of 13 MV the risk of sparking was very small, and therefore the users tried to avoid higher voltages for their experiments. About 50% of the available beamtime is dedicated to applied physics in the field of AMS and material analysis.

Additional workings done during the maintenance: Installation of infrared links to the deadsections for controlling the pumps, pressure and the dead section stripper. The Faraday Cup in the terminal was removed because it was never used.

Control system: All personal computers in the control system are now running under Windows 2000. All software tools for visualisation and documentation of machine parameters are completed. New electronics for the low energy chopper was developed. Testing and installation is planned for 2003. The high energy chopper was modified to match to CERN frequencies for testing accelerator structures for REX-ISOLDE.

For testing the pulsing system a Rutherford target with PIN-Diode detector was installed in the transfere-line to target room II. Information of the time structure and the presence of small pulses between the main pulses is gained.

Infrastructure: Again a lot of components of the infrastructure were updated, e.g. the systems for compressed air, cooling water and partially the air conditioning of the building.

No new beam lines were implemented.

Personell: In last year 5 members of the staff retired and their positions will not be reoccupied. Now we have no electrical engineer anymore. Further development of electrical components and even maintenance may become a critical point.

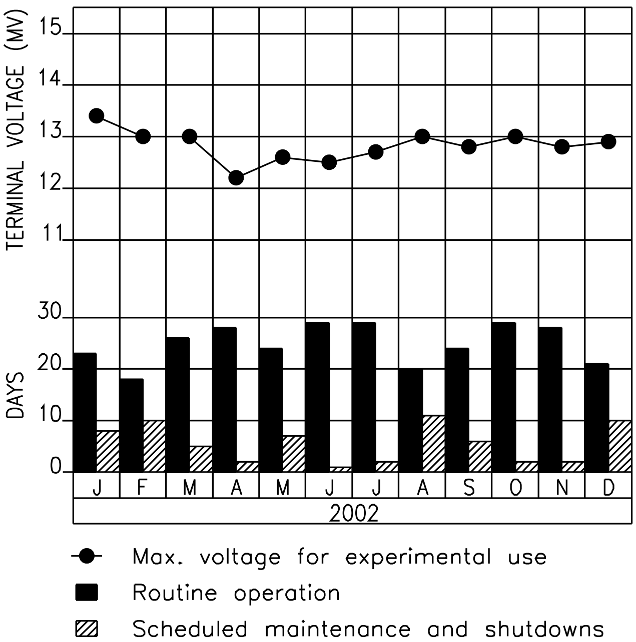

Fig. 1: Operating statistics 2002

ION	^{1}H	^{2}H	^{3}H*	^{4}He	^{11}B	^{16}O	^{35}Cl	^{36}Cl*	^{41}Ca*
%	11.0	14.9	2.2	1.5	6.1	9.3	3.2	3.9	6.1
ION	^{53}Mn*	^{58}Ni	^{63}Ni*	^{64}Zn	^{76}Se	^{107}Ag	^{127}I	^{197}Au	Others
%	2.2	1.5	4.1	1.7	3.2	5.2	9.5	12.3	2.1

Table 1: 2002 ion beam time in percent of total available beam time. The isotopes marked with an * are used for AMS studies.