

ENTRY NO. 25

NAME OF MACHINE Hamburger Isochron-Zyklotron - HAIZY DATE 1972
INSTITUTION I. Institut f. Experimentalphysik, University of Hamburg
ADDRESS Hamburg, Germany

IN CHARGE Board of the Institute REPORTED by M. Bormann, R. Langkau

HISTORY AND STATUS

DESIGN, date 1965 MODEL tests 1966
ENG. DESIGN, date 1966
CONSTRUCTION, date 1966-1968
FIRST BEAM date (or goal) 1968
MAJOR ALTERATIONS none

OPERATION, 140 hr/wk; On Target 70 hr/wk
TIME DIST., in house 70 %, outside 30 %
USERS' SCHEDULING CYCLE _____ weeks
COST, ACCELERATOR \$ 1.1 x 10⁶
COST, FACILITY, total _____
FUNDED BY State of Hamburg and BMW of Fed. Rep.

ACCELERATOR STAFF, OPERATION and DEVELOPMENT

SCIENTISTS 2 ENGINEERS 2
TECHNICIANS 6 CRAFTS 4
GRAD STUDENTS involved during year 4
OPERATED BY _____ Res staff or _____ Operators
BUDGET, op & dev \$200,000
FUNDED BY _____

RESEARCH STAFF, not included above

USERS, in house 12 outside 6
GRAD STUDENTS involved during year 12
RES. BUDGET, in house _____
FUNDED BY _____

FACILITIES FOR RESEARCH

SHIELDED AREA, fixed _____ m²
movable 600 m²
TARGET STATIONS 6 in 4 rooms
STATIONS served at same time, max 1
MAG SPECTROGRAPH, type _____
COMPUTER, model PDP 9
OTHER FACILITIES _____

Isotope production

Time-of-flight

REFERENCES/NOTES

Nucl. Inst. and Meth. 18, 19 (1962)
pp. 88, 201, 327, 336
Nucl. Inst. and Meth. 68 (1969), p. 135
Nucl. Inst. and Meth. 94 (1971) p. 391

MS - Movable short
VC - Variable capacitor

MAGNET

POLE FACE diameter 140 cm; R extraction 57 cm
GAP, min 16 cm; Field _____ kG } at _____ X 10⁶
max 32 cm; Field _____ kG } ampere turns
AVERAGE FIELD at R ext 15 kG
CURRENT STABILITY 20 parts/10⁶; B_{max}/⟨B⟩ 1.33
NUMBER OF SECTORS 3; SPIRAL, max 37 deg
POLE FACE COIL PAIRS: AVF _____ /sec;
Harmonic correction 3
Rad grad _____ /sec or Circ coils 10
WEIGHT: Fe 80 tons; Coils 8 tons
CONDUCTOR, Material and type _____
STORED ENERGY _____ MJ
COOLING SYSTEM water
POWER: Main coils 100 max, kW
Trimming coils 40 max, kW
YOKE/POLE AREA _____ %
SECTOR ANGLE (Sep Sec) _____ deg
ION ENERGY (Bending limit) E/A = 30 q²/A² MeV
(Focusing limit) E/A = _____ q/A MeV

ACCELERATION SYSTEM

DEES, number 1 angle 180 deg
BEAM APERTURE 2.8 cm; DC BIAS 1 kV
TUNED by, coarse MS fine VC, auto
RF 5 to 23 MHz, stable ± 20 /10⁶
Orb F 5 to 23 MHz; GAIN, max 100 kV/turn
HARMONICS, RF/Orb F, used _____
DEE-Gnd, max 50 kV, min gap _____ cm
STABILITY, (pk-pk noise)/(pk RF volt) 2 x 10⁻⁴
RF PHASE stable to ± _____ deg
RF POWER input, max 100 kW
RF PROTECT circuit, speed _____ μsec
Type Capacitive pickup
FREQUENCY MODULATION, rate _____ /sec
MODULATOR, type _____
BEAM PULSE, width _____

VACUUM SYSTEM

PUMPS, No., Type, Size _____
OPERATING PRESSURE 3 μTorr,
PUMPDOWN TIME < 2 hrs

ION SOURCES/INJECTION SYSTEM

Livingston type

EXTRACTION SYSTEM

DC-electrostatic def. + 2 compensating iron channels

CONTROL SYSTEM