

ENTRY No. 14

NAME OF MACHINE HIRFL DATE
INSTITUTION Institute of Modern Physics, Academia Sinica (IMP)
ADDRESS No. 57 Nanchang Road, Lanzhou, China
TEL 28956 TELEX 72153-IMP AS CN
IN CHARGE B.W.WEI REPORTED BY HIRFL staff

HISTORY AND STATUS

DESIGN, date 1976 Model tests 1979
ENG DESIGN, date 1982
CONSTRUCTION, date 1982-1988
FIRST BEAM, date (or goal) Dec. 12, 1988
MAJOR ALTERATIONS

COST, ACCELERATOR

COST, FACILITY, total
FUNDED BY

ACCELERATOR STAFF, OPERATION AND DEVELOPMENT

SCIENTISTS ENGINEERS
TECHNICIANS CRAFTS

GRAD STUDENTS involved during year

OPERATED BY Research staff or Operators

OPERATION hr/wk, On target hr/wk

TIME DISTR. in house % Outside %

BUDGET, op & dev

FUNDED BY

RESEARCH STAFF, not included above

USERS, in house outside

GRAD STUDENTS involved during year

RESEARCH BUDGET, in house

FUNDED BY

MAGNET

POLE FACE, diameter (compact) 717 cm, R extraction 321 cm

R injection 100 cm

GAP, min 10 cm, Field 16 kG

max 10 cm, Field 16 kG at 0.17 10^6

AVERAGE FIELD at R ext 9.58 kG Ampere turns

B max/ <B> 1.67

NUMBER OF SECTORS {compact 4 separated 4} Spiral, max .. deg

SECTOR ANGLE (SSC) 52 deg

TRIMMING COILS 36

CONDUCTOR, material and type

STORED ENERGY (cryogenic) MJ

POWER: main coils 552 max, kW; current stability 5 10^-6

trimming coils 138 max, kW; current stability 5 10^-5

WEIGHT: Fe 2000 tons; coils 15.6 tons

COOLING system Demineralized water

ION ENERGY (bending limit) E/A = 450 q^2/a^2 MeV/amu

(focusing limit) E/A = q^2/a^2 MeV/amu

ACCELERATION SYSTEM

DEES, number 2; angle 30 deg

BEAM APERTURE 5 cm; DC Bias kV

TUNED by, coarse fine

RF 6.5 to 14 MHz, stable +/- 2 10^-6

Orb F 1.4 to 6.38 MHz

HARMONICS, RF/Orb F, used 2-10

DEE - Gnd, max 250 kV, min gap 6 cm

STABILITY, (pk-pk noise)/(pk RF volt) 10^-3

ENERGY GAIN, max 1000 kV/turn

RF PHASE, stable to +/- 0.5 deg

RF POWER input, max 240 kW

FREQUENCY MODULATION, rate /s

modulator, type

beam pulse, width

VACUUM SYSTEM

OPERATING PRESSURE 10^-7 Torr or mbar

PUMPS, No, Type, Size

2 turbo pumps, TPH 5000

8 cryopumps, RKP 800

ION SOURCES

PIG, ECR

INJECTION SYSTEM

magnetic channel+electrostatic deflector

EXTRACTION SYSTEM

Bump coil+electrostatic deflector+magnetic channel

FACILITIES FOR RESEARCH

SHIELDED AREA, fixed m^2; movable m^2

TARGET STATIONS 8 in experimental rooms

STATIONS served at same time, max

MAG SPECTROGRAPH, type

COMPUTER model

OTHER FACILITIES

CHARACTERISTIC BEAMS

Table with columns: PARTICLE, ENERGY (MeV) Goal, Achieved, CURRENT (pA) Internal, External. Rows: C, Ar, Kr, Xe.

SECONDARY (part/s)

BEAM PROPERTIES

MEASURED CONDITIONS

PULSE WIDTH RF deg pA of MeV ions

PHASE EXC, max RF deg pA of MeV ions

EXTRACT eff % pA of MeV ions

RESOL ΔE/E % pA of MeV ions

EMITTANCE

(π mm. mrad) { axial rad } pA of MeV ions

OPERATING PROGRAMS, time distribution

BASIC NUCLEAR PHYSICS SOLID STATES PHYSICS

BIOMEDICAL APPLICAT. ISOTOPE PRODUCTIONS

REFERENCES/NOTES

PLAN VIEW OF FACILITY, NOTEWORTHY FEATURES, COMMENTS

