

ENTRY NO. FM-11

NAME OF MACHINE JINR PHASOTRON
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HISTORY AND STATUS

DESIGN, date 1967 Model tests 1968+74
ENG DESIGN, date 1968+74
CONSTRUCTION, date 1971+78
FIRST BEAM, date (or goal) March 1984
MAJOR ALTERATIONS

COST, ACCELERATOR
COST, FACILITY, total 18\*10^6 rubls
FUNDED BY JINR

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) 600 cm, R-extraction 270 cm
R injection cm
GAP, min 15 cm, Field 12 kG
max 30 cm, Field 18 kG at 1.35\*10^6
AVERAGE FIELD at R ext 16.3 kG Ampere turns
B max / < B >

NUMBER OF SECTORS {compact 4} Spiral, max 77 deg
{separated}
SECTOR ANGLE (SSC) deg
TRIMMING COILS 3

CONDUCTOR, material and type Al
STORED ENERGY (cryogenic) MJ
POWER: main coils 1100 max kW: current stability 5\*10^-2
trimming coils max kW: current stability
WEIGHT: Fe 7000 tons: coils 165 tons
COOLING system water
ION ENERGY (Bending limit) E/A = q^2/A^2 MeV/amu
(Focusing limit) E/A = q/A MeV/amu

ACCELERATION SYSTEM

DEES, number 1 angle 180 deg
BEAM APERTURE 4.6\*10 cm; DC Bias -2 kV
TUNED by, coarse fine
RF 18.2 to 14.4 MHz, stable +/-
Orb F 18.2 to 14.4 MHz
HARMONICS, RF/Orb F, used 1
DEE-Gnd, max 40 kV, min gap 3.5 cm
STABILITY, (pk-pk noise)/(pk RF volt)
ENERGY GAIN, max 80 kV/turn
RF PHASE, stable to +/- deg
RF POWER input, max 200 kW
FREQUENCY MODULATION, rate 200+500 /s
modulator, type rotating capacitor
beam pulse, width

VACUUM SYSTEM

OPERATING PRESSURE 2\*10^-6 Torr or mbar
PUMPS, No, Type, Size 5 diffusion pumps

ION SOURCES

Fig. type

INJECTION SYSTEM

EXTRACTION SYSTEM Regenerative extraction,
Iron-current channel
FACILITIES FOR RESEARCH

SHIELDED AREA, fixed 1500 m^2; movable m^2
TARGET STATIONS 4-7 in 2 rooms
STATIONS served at same time, max 2-3
MAG SPECTROGRAPH, type
COMPUTER model EC-1040, EC-1010, HP
OTHER FACILITIES Isotope production,
Medico-Biological Complex YASNAPP

CHARACTERISTIC BEAMS

Table with columns: PARTICLE, ENERGY (MeV), CURRENT (pA). Rows for p, secondary beams.

BEAM PROPERTIES

Table with columns: MEASURED, CONDITIONS. Rows for pulse width, phase exc, extract eff, resol, emittance.

OPERATING PROGRAMS, time distribution

BASIC NUCLEAR PHYSICS SOLID STATES PHYSICS
BIOMEDICAL APPLICAT ISOTOPE PRODUCTIONS

REFERENCES/NOTES

- 1)
2)

PLAN VIEW OF FACILITY, COMMENTS, ETC.