NAME OF MACHINE __GANIL__ DATE __1978__

INSTITUTION __Grand Accélérateur National d'Ions Lourds (GANIL)__

ADDRESS __B. P. 5027, 14021 CAEN CEDEX - FRANCE__

IN CHARGE __M. GOUTTEFANGEAS__ REPORTED by __GANIL STAFF__

HISTORY AND STATUS

DESIGN, date __1973__ MODEL tests __1976__

ENG. DESIGN, date __1975 - 1976__

CONSTRUCTION, date __1977 - 1982__

FIRST BEAM date (or goal) __1982__

MAJOR ALTERATIONS _____

OPERATION, _____ hr/wk; On Target _____ hr/wk

TIME DIST., in house _____ %, outside _____ %

USERS' SCHEDULING CYCLE _____ weeks

COST, ACCELERATOR _____

COST, FACILITY, total _____

FUNDED BY __French AEC and I N2 P3__

ACCELERATOR STAFF, OPERATION and DEVELOPMENT

SCIENTISTS __and__ ENGINEERS __44__

TECHNICIANS __50__ CRAFTS __10__

GRAD STUDENTS involved during year _____

OPERATED BY _____ Res staff or _____ Operators

BUDGET, op & dev _____

FUNDED BY __French AEC and I N2 P3__

RESEARCH STAFF, not included above

USERS, in house _____ outside _____

GRAD STUDENTS involved during year _____

RES. BUDGET, in house _____

FUNDED BY _____

FACILITIES FOR RESEARCH

SHIELDED AREA, fixed _____ m^2

movable __4 000__ m^2

TARGET STATIONS __8__ in __8__ rooms

STATIONS served at same time, max _____

MAG SPECTROGRAPH, type _____

COMPUTER, model _____

OTHER FACILITIES _____

REFERENCES/NOTES

- GANIL Group : these proceedings
- BIETH, Journées GANIL, Internal report, nov 1977.

MAGNET (SSC 2)

POLE FACE diameter __690__ cm; R extraction __300__ cm

GAP, min __10__ cm; Field __16.4__ kG ⎫
max __10__ cm; Field __16.4__ kG ⎬ at $.205 \times 10^6$ ampere turns
AVERAGE FIELD at R ext __9.65__ kG ⎭

CURRENT STABILITY __10__ parts/10^6; $B_{max}/\langle B \rangle$ __1.7__

NUMBER OF SECTORS __4__ ; SPIRAL, max __0__ deg

POLE FACE COIL PAIRS: ~~XXX~~ __15__ /sec;

Harmonic correction _____

Rad grad _____ /sec or Circ coils _____

WEIGHT: Fe __1 700__ tons; Coils __14__ tons

CONDUCTOR, Material and type __Copper__

STORED ENERGY __2__ MJ

COOLING SYSTEM __Demineralized water__

POWER: Main coils __950__ max, kW

Trimming coils __140__ max, kW

YOKE/POLE AREA __100__ %

SECTOR ANGLE (Sep Sec) __51__ deg

ION ENERGY (Bending limit) E/A = __400__ q^2/A^2 MeV

(Focusing limit) E/A = __> 200__ q/A MeV

ACCELERATION SYSTEM (SSC 2)

DEES, number __2__ angle __34__ deg

BEAM APERTURE __5__ cm; DC BIAS _____ kV

TUNED by, coarse __panel__ fine __plunger__

RF __6.5__ to __14__ mHz, stable ± __0.1__ /10^6

Orb F __1.6__ to __7__ mHz; GAIN, max __4 x 250__ kV/turn

HARMONICS, RF/Orb F, used __2 - 4__

DEE-Gnd, max __250__ kV, min gap __5__ cm

STABILITY, (pk-pk noise)/(pk RF volt) __5 10⁻⁴__

RF PHASE stable to ± __.5__ deg

RF POWER input, max __100 / cavity__ kW

RF PROTECT circuit, speed _____ μsec

Type _____

FREQUENCY MODULATION, rate __0__ /sec

MODULATOR, type _____

BEAM PULSE, width _____

VACUUM SYSTEM (SSC 1)

PUMPS, No., Type, Size __8 cryo pumps 20 000 l/s__
__4 turbo pumps 3 500 l/s__

OPERATING PRESSURE __.05__ μTorr,

PUMPDOWN TIME __24__ hrs

ION SOURCES/INJECTION SYSTEM

__PIG at the center of the C0 injector__

EXTRACTION SYSTEM (SSC 2)

__Electrostatic deflector + mag. channel__

CONTROL SYSTEM

__Computer MITRA 125__

CHARACTERISTIC BEAMS

	Particle	Goal (MeV/A)	Achieved (MeV)
ENERGY	C	100	
	Kr	50	
	U	8	
CURRENT Internal		XXX (part/s)	XX
External	C	10^{13}	
	Kr	$3 \ 10^{10}$	
	U	$3 \ 10^{9}$	
		(part/s)	(part/s)
Secondary			

BEAM PROPERTIES

	Measured			Conditions		
Pulse Width	6	RF deg	0.2p	μA of	100	MeV/A C
Phase Exc, max		RF deg		μA of		MeV
Extract Eff	90	%	''	μA of	'' MeV	''
Res, $\Delta E/E$	0.2	%	''	μA of	'' MeV	''

Emittance

(mm-mrad) $\left\{ \begin{array}{l} 25 \ \text{axial} \\ 15 \ \text{radial} \end{array} \right.$ '' μA of '' MeV ''

OPERATING PROGRAMS, time dist

Basic Nuclear Physics _____ %
Solid State Physics _____ %
Bio-Medical Applications _____ %
Isotope Production _____ %
Development _____ %
_____ %
_____ %

PLAN VIEW OF FACILITY, NOTEWORTHY FEATURES, OPERATION SUMMARY, ADDITIONAL REFERENCES

The heart of the GANIL accelerator consists of two identical separated-sector cyclotrons (SSC1, SSC2). The injector is a compact cyclotron (C01 or C02). Ions extracted from SSC1 are stripped by a factor of 3.5 before being injected in SSC2.