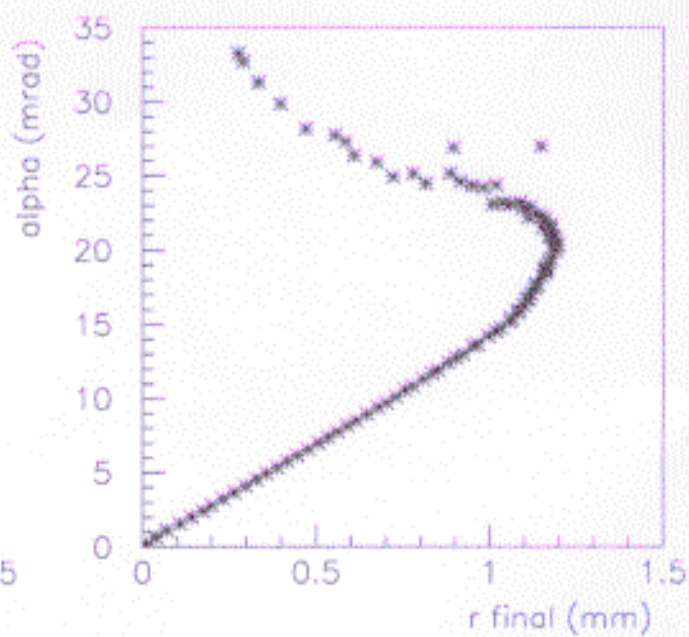
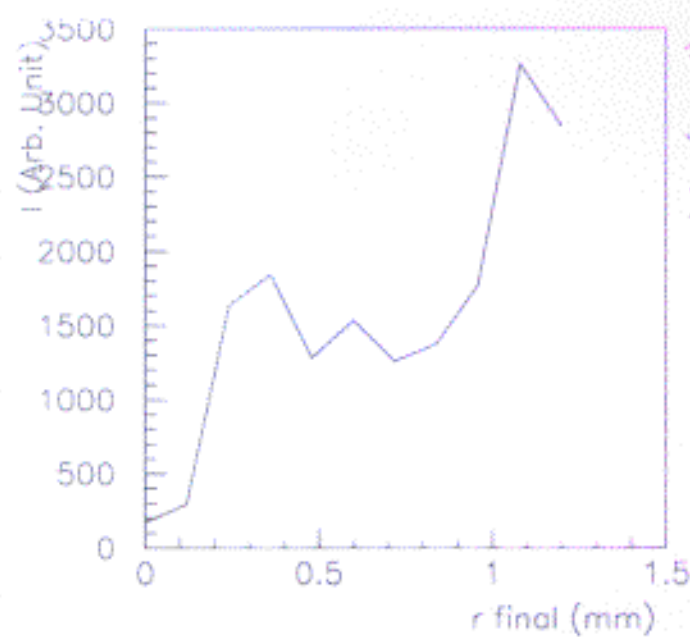
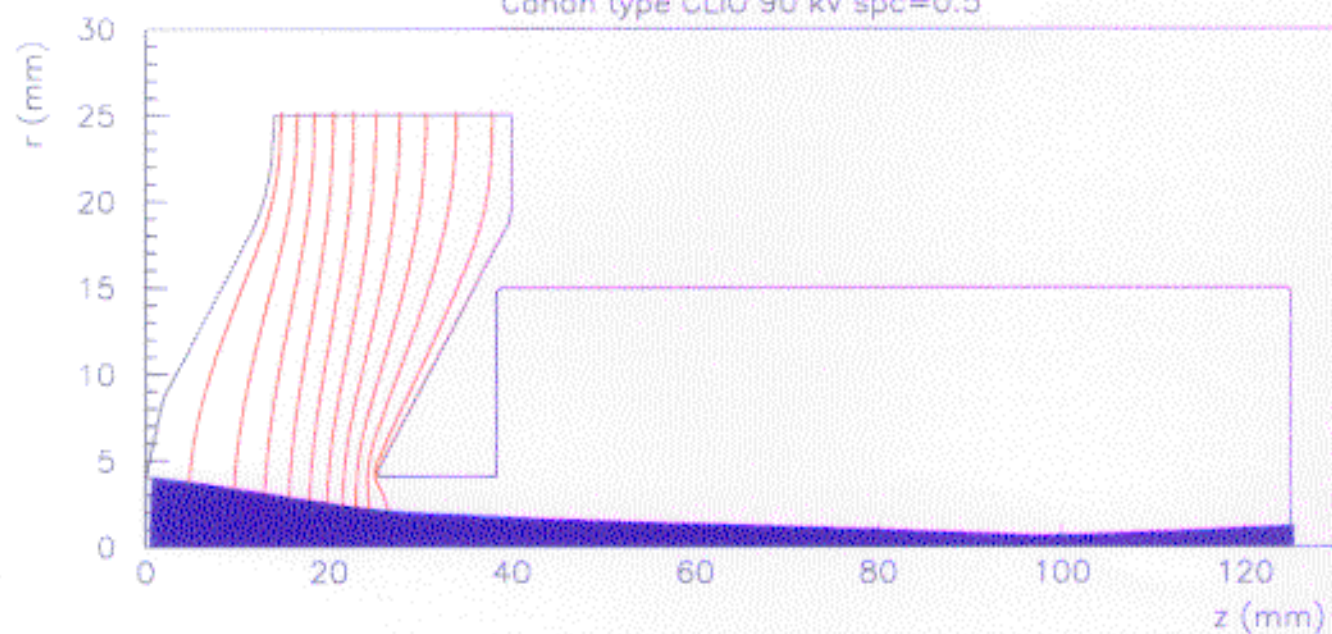


CLIO gun		
Aera of the cathode	0.5	cm ²
Diameter of the cathode	8.0	mm
Cathode anode distance	24.0	mm
Grid cathode distance	0.15	mm
Anode hole radius	8.0	mm
Angle of electrodes	45	degrees
Voltage (for beam)	90	kV
Gun current	1.6	A
Perveance	0.06	$\mu A/V^{1.5}$
Number of rays	100	
Efield maximum on boundary	20.94	MV/m
results in $z = 32.5$ mm		
Geometric emittance	11.4	mm mrad
Normalized emittance	7.0	mm mrad
Maximum radius	1.9	mm
results in $z = 62.5$ mm		
Geometric emittance	11.2	mm mrad
Normalized emittance	6.9	mm mrad
Maximum radius	1.3	mm
results in $z = 125.$ mm		
Geometric emittance	18.0	mm mrad
Normalized emittance	11.1	mm mrad
Maximum radius	1.2	mm

2000/04/21 08.10

Canon type CLIO 90 kV spc=0.5



A possible proposal for a CTF3 gun

B. Mouton

Aera of the cathode	3.00	cm ²
Diameter of the cathode	20.00	mm
Cathode anode distance	35.00	mm
Anode hole radius	12	mm
Angle of electrodes	45	degrees
Voltage (for beam)	90	kV
Gun current	10.4	A
Perveance	0.39	$\mu A/V^{1.5}$
Number of rays	100	
Efield maximum on boundary	7.89	MV/m

results in $z = 51$ mm

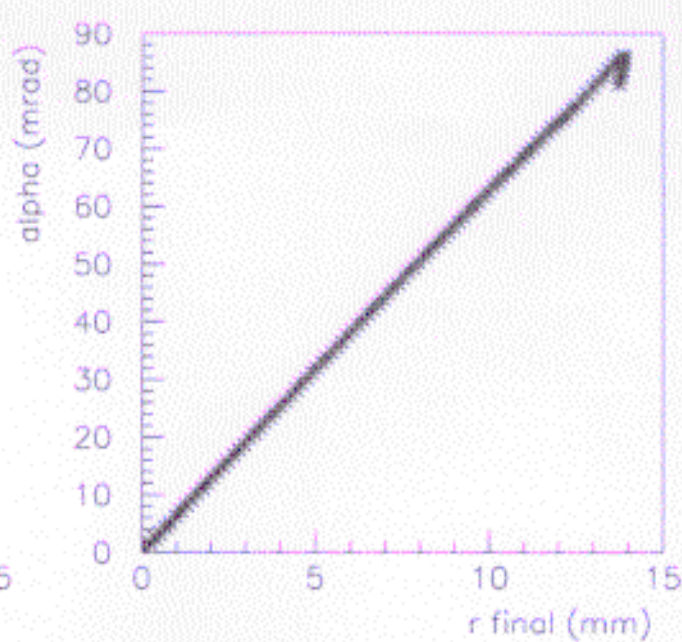
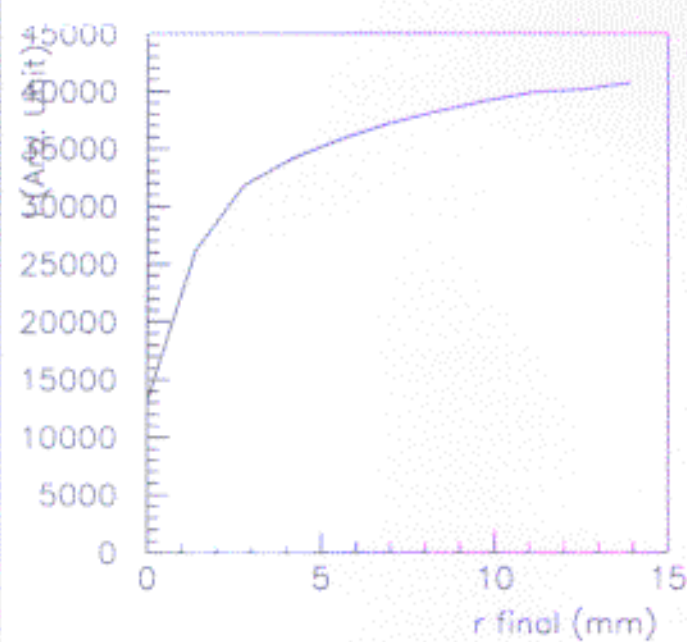
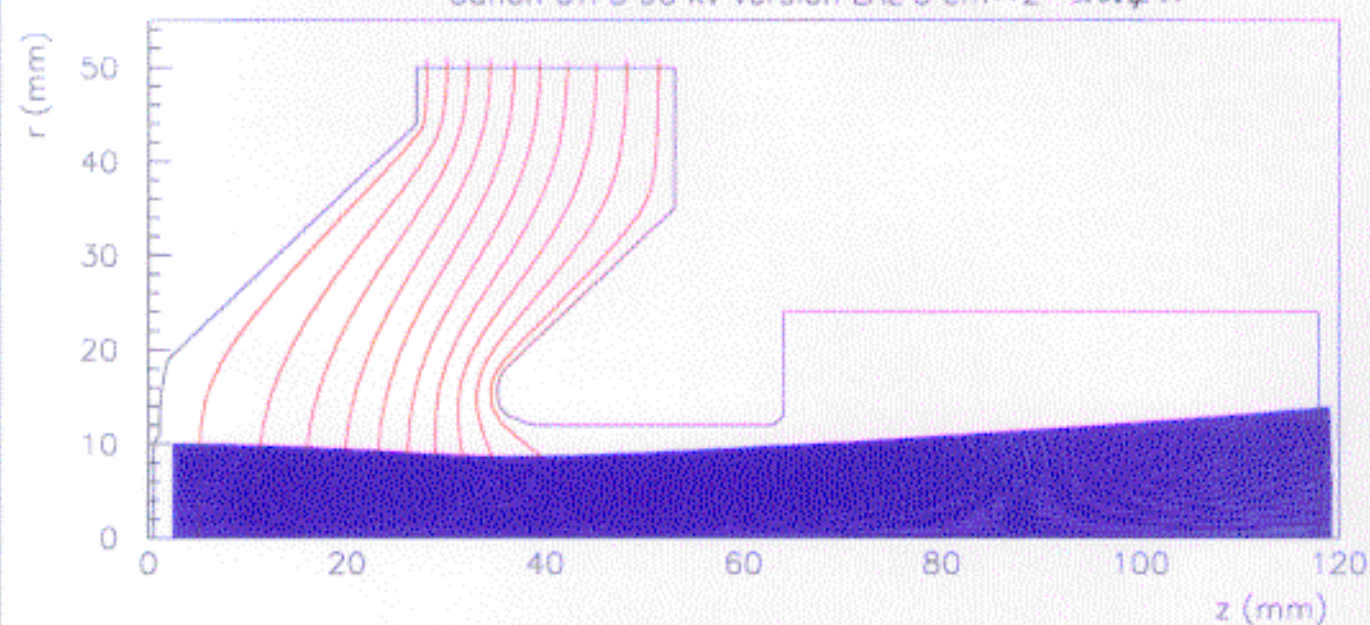
Geometric emittance	12.8	mm mrad
Normalized emittance	7.9	mm mrad
Maximum radius	9.1	mm

results in $z = 120$ mm

Geometric emittance	21.1	mm mrad
Normalized emittance	13.0	mm mrad
Maximum radius	13.8	mm

2000/04/19 07.44

Canon CTF3 90 kV version LAL 3 cm**2 10.4 A



A possible Sband gun

B. Mouton

Aera of the cathode	2.00	cm ²
Diameter of the cathode	16.00	mm
Cathode anode distance	34.00	mm
Anode hole radius	10	mm
Angle of electrodes	45	degrees
Voltage (for beam)	100	kV
Gun current	7.4	A
Perveance	0.23	$\mu A/V^{1.5}$
Number of rays	100	
Efield maximum on boundary	8.8	MV/m

results in $z = 51$ mm

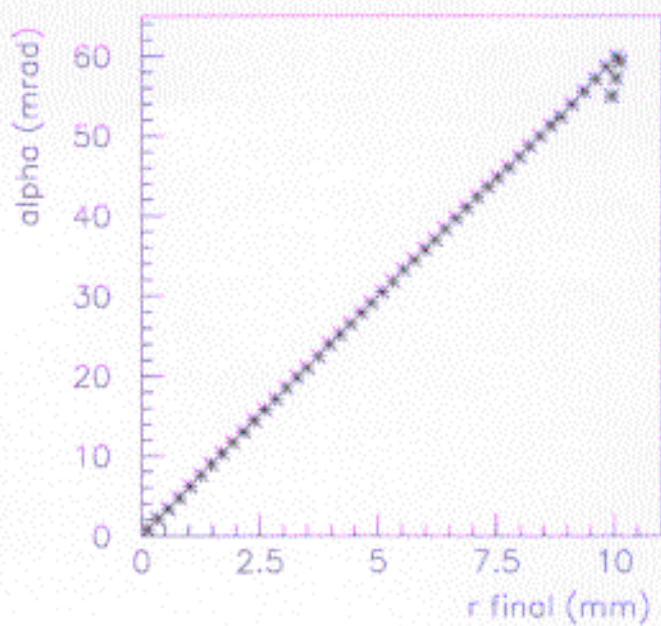
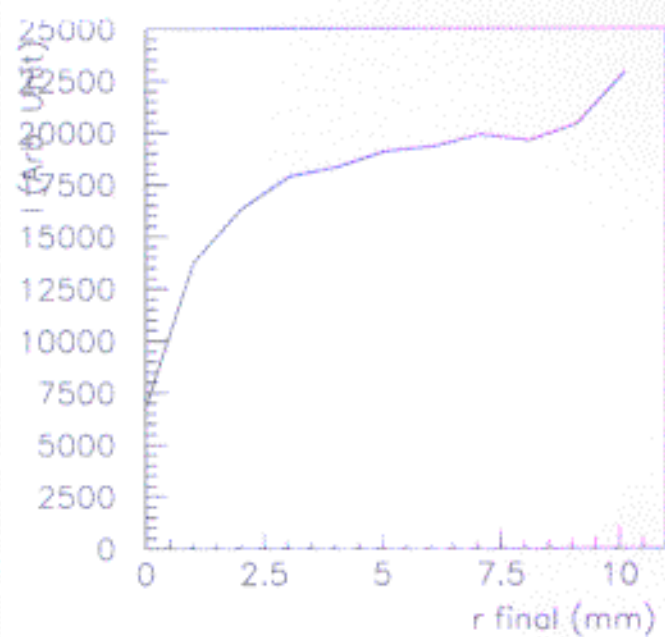
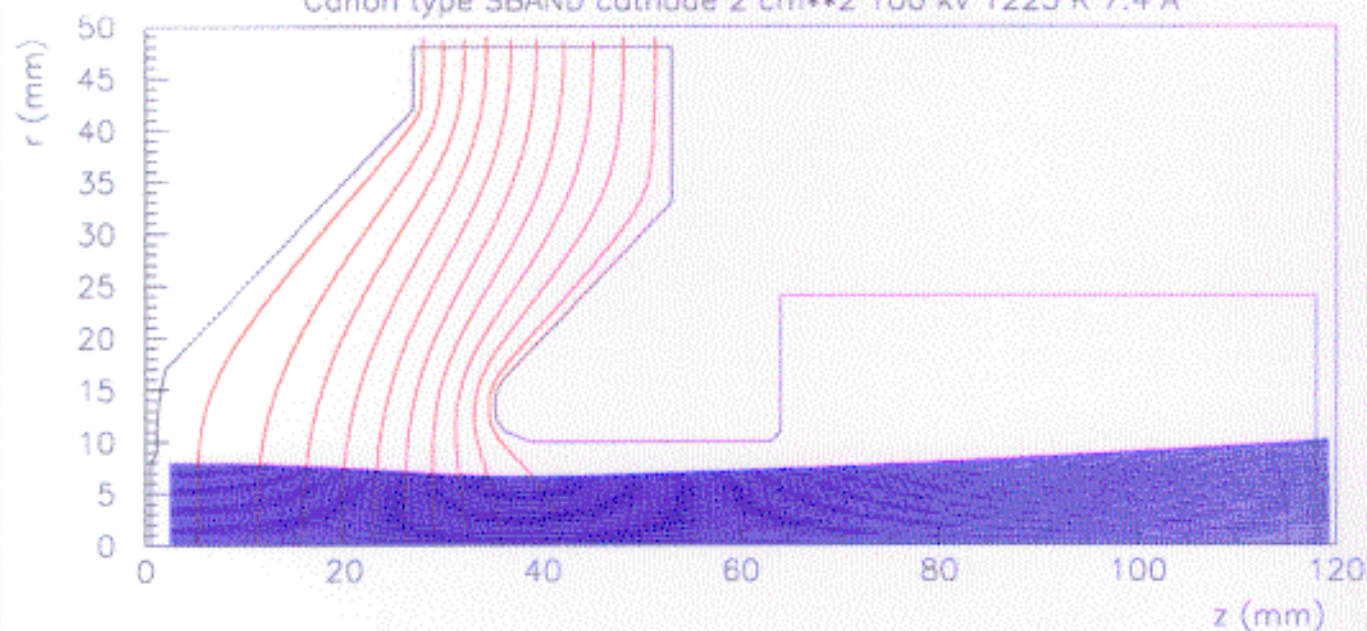
Geometric emittance	10.6	mm mrad
Normalized emittance	6.9	mm mrad
Maximum radius	6.9	mm

results in $z = 120$ mm

Geometric emittance	14.6	mm mrad
Normalized emittance	9.5	mm mrad
Maximum radius	10.1	mm

2000/04/20 17.41

Canon type SBAND cathode 2 cm**2 100 kV 1223 K 7.4 A



20 avril 2000B. Mouton

Les Canons Aide mémoire

Tous les calculs avec $\text{spc} = 0.5$

Pour les cas avec champ magnétique ne pas tenir compte du calcul de l'émittance

Type	Surface cathode cm ²	Rayon cathode mm	Dist K-A mm	Tension kV	Intensité A	Pervéance $\mu\text{A}/\text{V}^{1.5}$	Rés en α mm	Max rays	Emittance <i>weighted by I</i> π mm mrad	Emittance <i>normalized</i> π mm mrad	R max mm	E max Egun MV/m
CLIO	0.5	4.0	24	90	1.6	0.06	32.3	95	11.4	7.0	1.9	18.
CLIO	0.5	4.0	24	90	1.6	0.06	62.5	16	42.1	26.0	1.5	18.
CLIO	0.5	4.0	24	90	1.6	0.06	62.5	95	11.2	6.9	1.3	18.
CLIO	0.5	4.0	24	90	1.6	0.06	125.	16	14.5	9.0	1.2	18.
CLIO	0.5	4.0	24	90	1.6	0.06	125.	95	18.0	11.1	1.2	18.
CLIO 100 G	0.5	4.0	24	90	1.6	0.06	62.5	16	209.	129.	3.1	18.

20 avril 2000B. Mouton

Les Canons Aide mémoire

Tous les calculs avec $s_{pc} = 0.5$

Pour les cas avec champ magnétique ne pas tenir compte du calcul de l'émittance

Type	Surface cathode cm ²	Rayon cathode mm	Dist K-A mm	Tension kV	Intensité A	Pervéance $\mu A/V^{1.5}$	Rés en z mm	Max rays	Emittance weighted by I π mm mrad	Emittance normalized π mm mrad	R max mm	E max Egun MV/m
SBAND	2.0	8.0	34	90	6.3	0.23	120.	16	13.2	8.1	10.1	7.5
SBAND 1223 °K	2.0	8.0	34	90	6.3	0.23	120.	96	14.3	8.8	10.1	7.5
SBAND 1223 °K	2.0	8.0	34	90	6.3 7.4	0.23	51.3	96	10.6	6.5	6.9	7.5
SBAND	2.0	8.0	34	100	7.4	0.23	120.	16	13.4	8.7	10.1	8.3
SBAND 1223 °K	2.0	8.0	34	100	7.4	0.23	120.	96	14.6	9.5	10.1	8.3
SBAND 1223 °K	2.0	8.0	34	100	7.4	0.23	51.3	96	10.6	6.9	6.9	8.3
SBAND	2.0	8.0	34	120	9.7	0.23	120.	16	13.7	9.9	10.	9.8
SBAND	2.0	8.0	34	120	9.7	0.23	120.	96	15.1	10.9	10.1	9.8
SBAND	2.0	8.0	34	120	9.7	0.23	51.3	96	10.7	7.7	6.9	9.8
SBAND	2.0	8.0	34	150	13.	0.23	120.	16	14.3	11.6	10.	15.
SBAND 1223 °K	2.0	8.0	34	150	13.5	0.23	51.3	96	10.6	8.6	6.8	15.
CTF3	3.0	10.0	35	90	10.4	0.39	120.	16	18.9	11.6	13.8	7.8
CTF3	3.0	10.0	35	90	10.4	0.39	120.	100	21.1	13.0	13.8	7.8
CTF3	3.0	10.0	35	90	10.4	0.39	51.3	96	12.8	7.9	9.1	7.8
CTF3 1300 °K	3.0	10.0	35	90	9.8	0.36	120.	16	26.2	16.1	13.1	7.8
CTF3 500 G	3.0	10.0	35	90	10.2	0.38	120.	16	837.	513.	8.0	7.8
CTF3	3.0	10.0	35	150	22.3	0.39	120.	20	20.0	16.3	13.6	12.5
CTF3	3.0	10.0	35	150	22.3	0.39	120.	100	22.6	18.4	13.7	12.5
CTF3 1223 °K	3.0	10.0	35	150	22.3	0.38	51.3	100	12.3	10.0	9.	12.5
SLAC 1223 °K	2.0	8.0	45	150	7.4	0.12	121.	96	11.5	9.4	6.8	9.4
SLAC 1223 °K	2.0	8.0	45	150	7.4	0.12	60.	96	8.0	6.5	5.8	9.4