

C L I C / P S

NEXT MEETING : FRIDAY 29 OCTOBER 1993

9.00hrs in the large PS CONFERENCE ROOM

J.H.B. MADSEN

AGENDA

1. CTF STATUS

S. Schreiber: the laser and the train generator at 262 nm

G.Suberlucq: the pc production and transfer system

2. LC93 workshop

Some head lines

Distribution:

Autin B.	PS	Koziol, H.	PS
Bossart R.	PS	Kugler H.	PS
Braun H.	PS	Madsen J.H.B.	PS
Brouet M.	AT	Millich A.	SL
Caspers F.	PS	Pearce P.	PS
Corsini Roberto	PS	Pirkl, W.	PS
Delahaye J.-P.	PS	Potier J.-P.	PS
Devlin-Hill P. M.	PS	Riche A.J.	PS
Fischer C.	SL	Riege H.	AT
Garoby, R.	PS	Rinolfi L.	PS
Geissler K.K.	AT	Schnell W.	SL
Godot J.-Cl.	PS	Schreiber S.	AT
Guignard G.	SL	Suberlucq G.	PS
Hübner K.	PS	Thorndahl L.	PS
Hutchins S.	PS	Van Rooy M.	AT
Jensen E.	PS	Warner D.	PS
Johnson C. D.	PS	Wilson E.J.N.	PS
Joly Pierre	PS	Wilson I.	SL
Kamber I.	PS	Wuensch W.	SL

Summary Notes of the CLIC/PS Meeting 24/09/93

1. Recent results in the CTF

See Annex 1 and 2.

Fig. 1 illustrates the performance with a train of 8 bunches. The run still continues and in the meantime the two times 8 bunch train was brought into service. The first bunch was re-accelerated in the probe beam.

2. Programme for run 4

This run will start in the last week of October and probably last until X-Mas. The laser will operate at 262 nm with a new pulse train generator. Cs₂Te as photocathode implying that the pc will be transferred under vacuum from the photo-emission lab. to the RF gun.

The beam-line remains unchanged.

3. New proposal for doing the BPM experiments

Basic idea: install the experiment in a permanent way downstream of TRS. A diaphragm, diameter 1 mm must be put in front of the experiment. Not certain, but the intensity in the probe beam may become too low. Putting the experiment in the straight line behind BHZ500 means decoupling it from the probe beam. This is acceptable as the BPM-experiment is done with a single bunch and thus when the probe beam is not in use (afterwards we looked into the optics and a solution can be found).

Conclusion: we prepare the installation of the BPM-experiment behind BHZ500 for early '94.

4. Other modifications to the CTF beam line early '94

The construction of the four cell section (the gun booster) encounters some problems (with the brazing and dimensions). Attempts are made to save the gun booster. It was recommended to order new pieces for constructing another one. Early '94 we intend to move the gun back to make room for the booster, a solenoid, a spectrometer, a TCM and another UMA.

No room will be reserved for a magnetic bunch compressor as the feasibility studies are not yet completed and also a second booster may be introduced.

[Run 3.]

Annex 1

- 1 -

Starting 16 Aug. '93 CsI cathode.

Setting-up of train of 3 laser e^- bunches

.... timing laser train adjusted with phase scans.

UMA 385	$1162 \cdot 10^8$ (18.6nC 100%)	max. 3.6 MW	30 pHz.
" 406	1101. " (17.6 " 95%)	regularly	2.8 MW.
" 455	586 " (9.4 " 51%)		

Single laser pulse - e^- bunch.

Bunch length as function of charge.

UMA 385	$500 \cdot 10^8$	TCM445 T	16.9 ps FWHM.
"	330 "		15.7 ps
"	158 "		10.7 ps.
"	58 "		11.4 ps.

as for Cu

Beam transmission through TRS.

improved with SNL400 (solenoid on LAS) at 200 A.

Beam position and shape stabilized at entrance TRS.

by steering in LAS ... using TCM445 T transverse

... " 4.5 pHz signal in PRS.

<u>Beel.</u> UMA 385	$542 \cdot 10^8$	8.7 nC	100%
" 406	467 "	7.5 "	86%
" 455	382 "	6.1 "	70% (previous max. 5.0 nC).

		H	✓
$f \times$ Amitt.	nom. mod.	615	810

Joulemeter $1.7 \mu\text{J}$

Vac. window 3.24 ''

$154.10^{\circ} \rightarrow 3.5 \mu\text{J}$ Joulemeter.

$2.46 \mu\text{C} - 6.7 \mu\text{J}$ or p.c.

0.2% ?

Run 3 cont.

Anex 2

Beam emittance, 1.6 mC, 60 KeV/e

Hor. 5.3 mm mesh whole beam

Vert. 6.9 " "

Charge measurements with UMA compared with FC ... OK.

Train & laser pulses / e⁻ bunches

Transmission optimized with SNL400, steering.

UMA 385 984.10⁸

406 972. "

455 645. "

Further optimization (SNF350).

UMA 385 782.10⁸ 12.5 mC 100%

406 752. " 12.0 " 96%

455 675. " 10.8 " 86%.

Probe beam with above situation showed ΔE of CAS: 4.85 KeV

or 17 MV/m in CAS

for 3.2 MW (30 fHz) from TRS

... compared with the expected 18 MV/m.

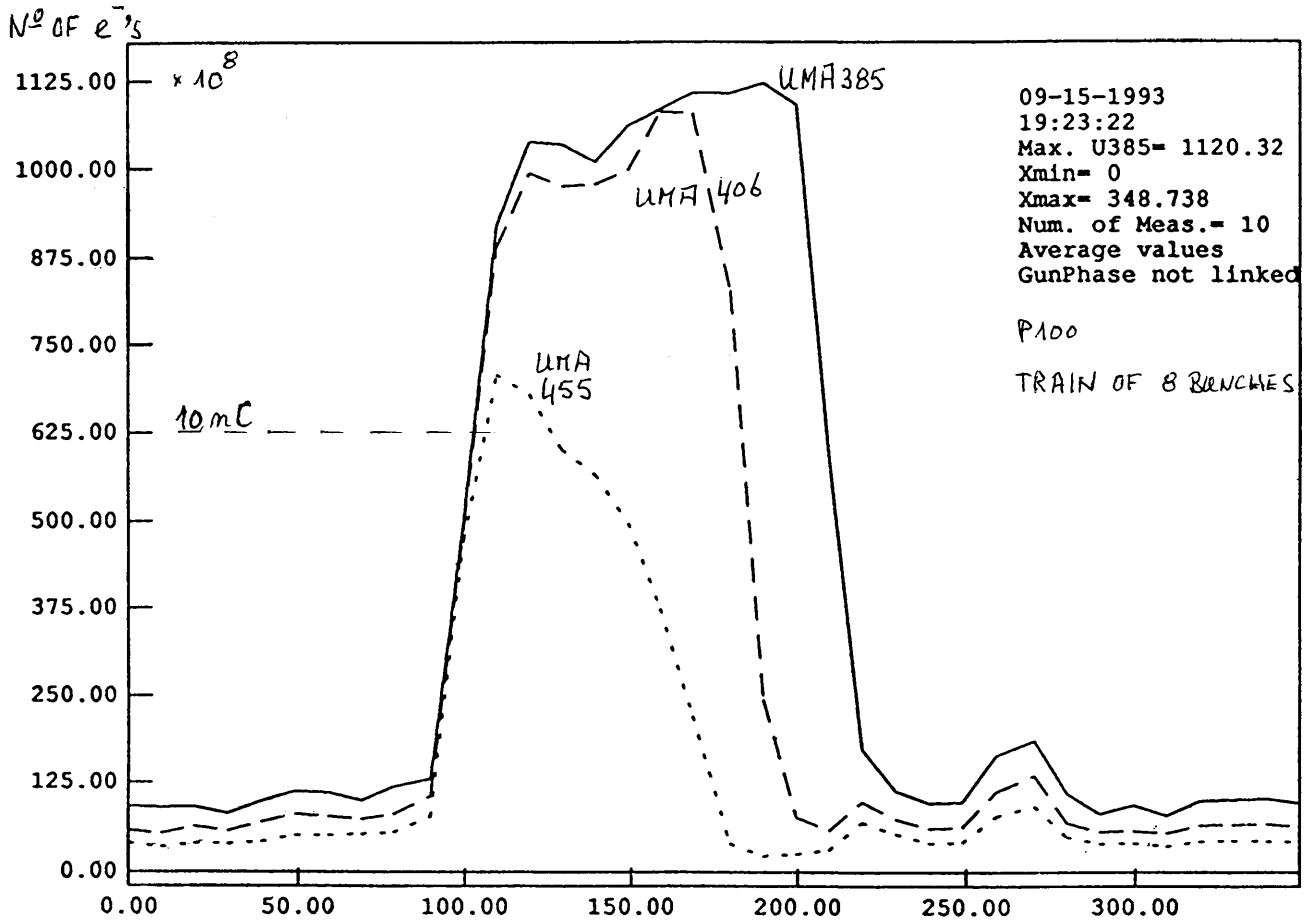


Fig 1

Train 8 bunches . P100