



Week Summary Report

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A. Overall Summary

Week type: Manchester Water Phantom, CHUV ZFE irradiation and WCM studies.

Date/Week Number: 04/07/2022 to 08/07/2022 (Week 27)

EDMS number: - <https://edms.cern.ch/document/2669406/1>

Beam time: 5 days
Fatal Failure time: 0 days
Installation time: 0.5 day
Number access: 6

#	Experiment Name	Responsible	Institute	Installation time (h)	Access number	Beam time (h)
1	Manchester Water Phantom	Lucy Whitmore	Manchester University	6	4	30
2	CHUV ZFE	Houda Kacem & Jonathan Ollivier	CHUV	1	2	3
3	WCM	Andreas Schloegelhofer	CERN	0	0	4

Weekly activity

The week was dedicated to Manchester University Water Phantom experiment, Zebra Fish Eggs irradiations and Wall Current Monitor studies.

B. Day by day report

Monday

- C-Robot and in-air cameras were reinstalled.
- Large laser leak. Laser had to be re-calibrated.
- Quad scans on BTV390.
- Really nice waist in air was found quickly.
- A few intensity scans were done for the WCM.

Access: 1



Tuesday

- EBT-XD films were installed on 4 long holders (including a double one).
- A better waist was obtained in air.
- Irradiations of films were done around the waist position.
- More beam was used for WCM studies.
- RP access at 17:30 to pick up the films.

Access: 2

Wednesday

- Manchester EBT-XD films irradiated on Tuesday were scanned (a clear vertical waist is seen on the films as well).
- Setup for CHUV ZFE irradiations was installed.
- Beam ON before CHUV arrived to warm up the machine, prepare the beam and rehearse the irradiations.
- Due to an issue with the C-Robot, a quick RP access was needed to hard reset the crate and to move the Y linear stage away from the limit switch.
- The following irradiations were done for the ZFE:
 - o 6 Conventional irradiations (5.9 mm x 5.9 mm, 3 at 10 Gy and 3 at 12 Gy)
 - o 6 UHDR irradiations (5.9 mm x 5.9 mm, 3 at 10 Gy and 3 at 12 Gy)
- CHUV decided to alternate CONV/UHDR and 10/12Gy as follows: UHDR 10 Gy, Conv. 10 Gy, UHDR 12 Gy, Conv. 12 Gy, etc.
- All the irradiations went well. An horizontal offset is seen for all Conv. Irradiations though.
- Eggs were collected, checked and brought back to CHUV.

Access: 2

Thursday

- Meeting with Stéphane Burger, Stefano Mazzoni and the fellow working on the GUI for the digital cameras. The GUI should be ready by October, when the digital cameras will be delivered.
- After using the same parameters that were used in April to obtain a waist in water and tuning a bit the machine, a nice vertical waist was obtained in water.
- The BLM scripts from the summer student is starting to give interesting data.

Access: 0

Friday

- A new set of EBT-XD films was installed in the 4 long holders.
- A pump was installed to remotely add water in the beam tank.
- Some issues were observed with a circuit breaker on the MKS11 crate resulting in losing remote control of the klystron.
- A really nice waist in air was obtained and the double long holder was irradiated in air around the waist longitudinal position (targeting 15 Gy).
- The beam tank was filled in with water and a waist in water was obtained.
- A double holder was then irradiated around the waist longitudinal position in water.
- Some tuning was done and one obtained a clearer waist in water and a peak in dose.



- A third long holder was irradiated around the waist longitudinal position (targeting 15 Gy).
- Klystron MKS11 tripped due to the circuit breaker.
- The klystron couldn't restart.
- RF and CLEAROP people investigated. The issue is coming from the charger of MKS11 Thyatron. Loud breakdowns were heard when trying to ramp up the HV of the klystron. The issue couldn't be fixed on Friday. The charger might need to be changed. This will be done hopefully on Monday.

Access: 1

Other business

Additional resources

C. Main issues

The charger of MKS11 seems to be the problem. One will spend more time investigating on Monday. One might need to change it.

D. Action needed to be followed up

Alexander was given a PS55 key by the secretary to enter the CLEAR building while waiting to get the CERN card access to the building. He agreed to give it to the CLEAROP team and this key will be added in the CLEAR Key Cabinet.