

# Minutes of the SPL steering group (draft)

## meeting no. 11

**date:** 11 July 2008

**present:** E. Ciapala, R. Garoby, F. Gerigk, J. Tuckmantel, M. Vretenar

## Agenda

1. General news and facts
2. Understanding of  $Q(f,T,B)$  (F. Gerigk)
3. Report on the review meeting
4. Round table
5. Next meeting

### 1. General news and facts (R. Garoby)

- During nufact'08 the latest results from the official HARP analysis group seem to indicate that at 5 GeV there is a good efficiency for pion production, contrary to many earlier claims which were pointing at much higher energies.
- The Cockcroft Institute (UK) is willing to establish a long-term commitment to CERN and a MoU is in preparation. Subjects include work on an RF distribution system and phase/amplitude shifters, which could be covered by Lancaster University (Prof. Carter), Daresbury laboratory is interested in collimation studies for LINAC4/SPL beams. ASTeC (RAL) could be a good partner of synchrotron beam dynamics (also PS2). Once the MoU is signed by both sides, single subjects will be added as "Addenda".
- The status of FP7 funding was summarised in the recent meeting of the SPL study group.

### 2. Understanding of $Q(f,T,B)$ (F. Gerigk)

F. Gerigk presented the dependance of  $Q$  from frequency and cryogenic temperature which is predicted by the standard BCS theory. According to this one finds that at 2 K the  $Q$  for a 1408 MHz cavity is a factor of 3 worse than the one for a 704 MHz cavity. Taking this difference into account the needed refrigerator power for an SPL at 1408 and 704 MHz becomes basically equal, removing another argument that made the 1408 MHz option seem more attractive. For the overall electric power needed by the SPL, however, the fact remains that 704 MHz will consume considerably more power than a 1408 MHz system (20 - 40%).

W. Weingarten has suggested an additional term for the surface resistance that includes the dependency on the magnetic field in the cavity. The effects will be included once he is back from holidays.

### 3. Report on the review meeting

R. Garoby has sent guidelines to the steering group members for the preparation of the report. A draft version should be available before the end of the month.

## 4. Round table

- S. Calatroni sent us the final version of the note [\[?\]](#) on field emission statistics at Argonne.
- C. De Almeida Martins asked for the needed flat top length of the klystron modulators for the LP-SPL. Originally he had planned to use the same modulators that are intended for the normal conducting Linac4, which will provide a 1.3 ms flat top for a 1.2 ms beam pulse. Due to the long filling time of the SC cavities the flat top for these cavities has to be increased to ~2 ms. *added after the meeting after discussing with C. De Almeida Martins and the steering group:* no additional time is needed to stabilise the RF field. The modulators will consist out of 2 power supplies: one that supplies the bulk of the power and which provides ~15% accuracy, the 2nd one is there to stabilise the power to 1%. This means that there is no gain if one admits a larger inaccuracy for the supplied voltage because the 2nd power supply only makes up for ~5% of the price

## 5. Next meeting

to be announced

next general SPL meeting September, 10th 2008, 9:00 in 6-2-004

## 6. Comments

-- FrankGerigk - 14 Jul 2008

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