

Adrian Fabich

From: Rende Steerenberg
Sent: Freitag, 15. Oktober 2004 17:02
To: Helmut Haseroth; Adrian Fabich
Cc: Massimo Giovannozzi; Django Manglunki; Simone Gilardoni
Subject: KFA71/79

Dear colleagues

Our kicker 71/79 consists of 12 modules that can each provide 80KV per module. There are two mode in which the kicker can operate to provide multiple kicks:

1. Multi batch mode
2. Multi kick mode

1. Multi batch mode:

This mode allows to recharge the pfn networks again and therefore one can use the full strength of the kicker twice. The main constraint is however, that the minimum time between the two batches should be 10 ms, which for your application is of no use at all. In this configuration the amplitude of the two pulses can be different if requested.

2. Multi kick mode:

Within the multi batch mode one can use the multi kick mode.

This means that one can pulse the magnet multiple times with the same amplitude at an interval of several RF periods. The main constraint here is the maximum pulse amplitude per kick, which is determined by the amplitude of the kick and the number of kicks necessary. Each module can provide 80KV and we have 12 modules (e.g. 12 kicks at maximum 80KV or 6 kicks at maximum 160KV). In uor case you would like to have two kicks, which would means that the maximum amplitude per kick you could ask from the power supply is 480KV. The value presently used for the TOF beam (20GeV/c) is 680KV. This means that for one kick we use 9 modules and that we cannot have a second kick within the same batch.

The conclusion is thus that this way we cannot fulfil your request.

Now we have a second type of extraction which is the present multiturn extraction (CT) for the SPS. There we could perhaps have the possibility to extract two bunches at different times using the fast bumper system alone or in combination with the KFA71. However, we have not much experience with this and we only use it from time to time to extract the PS (debunched) beam in one turn instead of five turn to the SPS still using the multi turn extraction system. One thing that should be mentioned is that up to now we only did this with medium intensity beams.

If you would like to know more about this you have to give me, but perhaps also some other people some extra time to discuss this.
Please, keep in mind that this is up to now just an idea an not a guaranteed success.

Best regards,

Rende

PS: Next week I will not be at CERN, but at the ICFA HB-2004 in Bensheim Germany. I will be back at CERN on Monday 25/10

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