

Minutes SSWG held on 4/9/2002.

J. Uythoven :

J. Uythoven gave a report on an MD where the trigger time of the five kicker systems used for proton injection was adjusted. In previous MD's it was found that the last and/or the first bunch of subsequent LHC batches were suffering from injection oscillations showing that the rise time of the sum of the five kicks was too big for the nominal hole of eight missing bunches. During the MD the kick of every individual system was measured by looking at the oscillation amplitude of every single bunch when putting the rise time in the middle of the batch. Two "old" systems have a slower rise time than the three "newer" systems. Before the kicks were aligned in such a way that they reached their flat top at the same time. During the MD it was found that it was better to align the centre of the ramps. In this way the rise time of the sum fits into the gap and the injection oscillations disappeared. J. Uythoven said also that the ignition of the PFN can vary by 10 nsec. This variation however is slow and depends mainly on the temperature so that this timing procedure should be repeated from time to time.

Discussion on the long MD week after the proton run.

During the MD the super cycle length should be at least 16.8 seconds long and we are only allowed to take two batches. Two periods of 8 hours will be foreseen where batches can be used.

It was agreed to move the 24hour MD, using the full LHC cycle, to the end of the period so that it can profit from the scrubbing run.

There was a request to use a small ramp to 55 GeV at the end of the scrubbing cycle.

A proposal, to decelerate a dense bunch from 26 GeV to 14 GeV or lower (crossing transition) in order to study the effect of space charge tune shift, was declared impossible by J. Gareyte. He reminded that old measurements have shown that it is impossible to cross transition with more than  $2 \cdot 10^{10}$  protons per bunch. It would therefore be better if the CPS could make an effort to produce dense bunches at 14 GeV.

W. Hofle:

W. Hofle commented on the coupling between longitudinal oscillations and the horizontal blow up of the LHC beam. The signal from the damper PU shows that the horizontal instability coincides with maximum energy excursion and not the phase. So it not the phase error at the PU that is provoking the instability but he suspects that the dispersion at the PU might play a role.

E. Shaposhnikova showed a table with the latest results obtained for the LHC beam in the longitudinal plane. For the nominal beam intensities the longitudinal emittance and bunch length are within the design.